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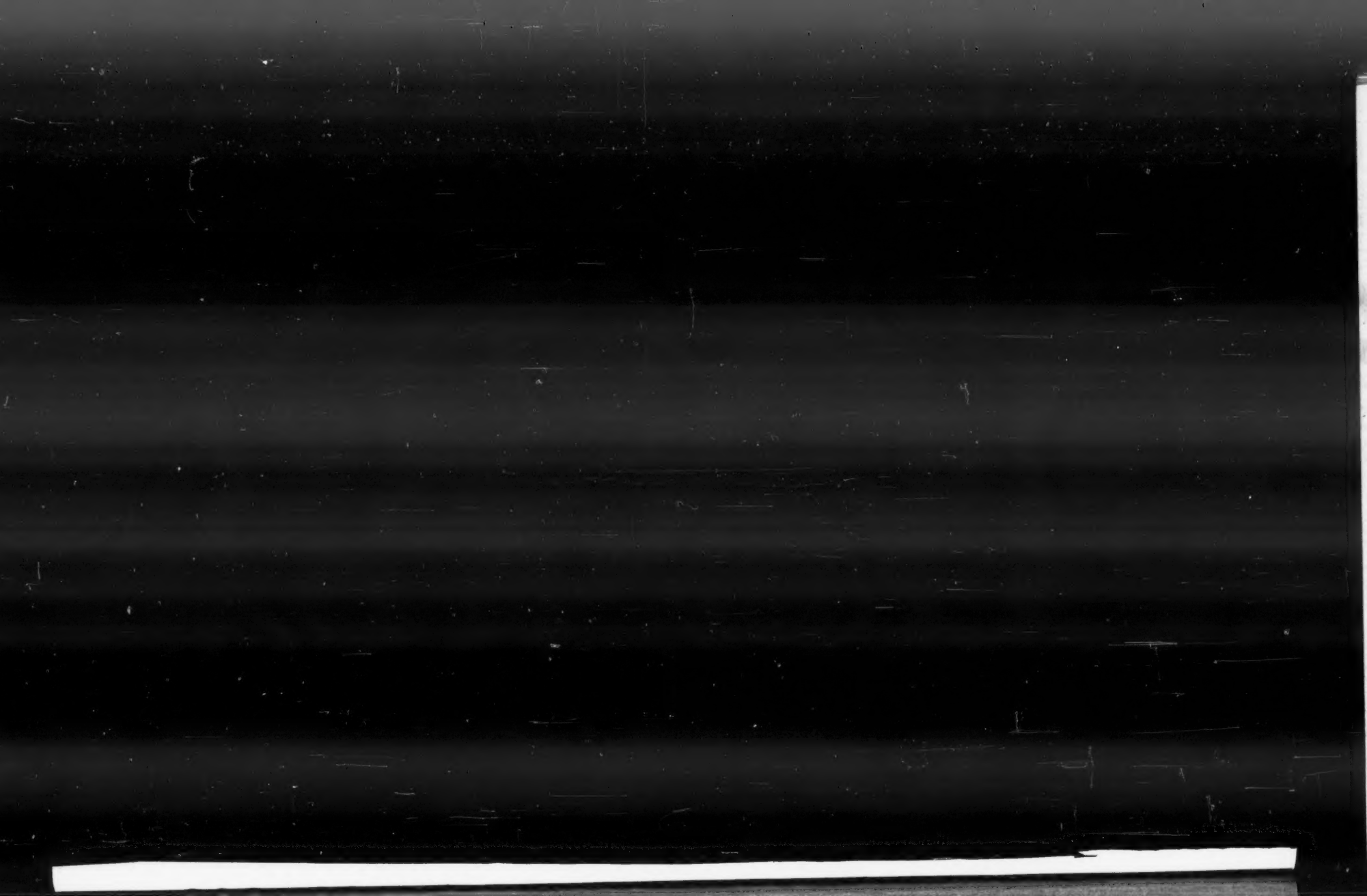


A Method and Device for Wage Standardization and Control[1]

By D. B. Van Hollen, *Assistant Manager, Employment and Personnel Department, Consolidated Gas, Electric Light and Power Company of Baltimore*

Though strictly speaking the present paper does not announce the results of a completed piece of personnel research, it is much more than a mere account of employment procedure. It has several important implications for workers in personnel research.

In the first place, the method described is itself a result of personnel research activities growing out of studies made at the Consolidated Gas, Electric Light and Power Company in Baltimore and also out of researches carried out in the Scott Company Laboratory.[2]

In the second place, the article indicates how such a series of records furnishes data for subsequent research studies and how the keeping of such records of itself calls attention to types of research that may be profitably undertaken.

BY NOVEMBER 1920, the Consolidated Gas Electric Light and Power Company of Baltimore had evolved a system of personnel records and practices. This system had been developed gradually to meet the specific problems which arose in connection with the personnel work of the Company. At this time it was felt that the records already installed and the practices then in use were in need of revision, in order that they might be made to embody the principles and practices involved in more advanced thinking upon the subject of industrial personnel. Moreover the system needed to be coördinated in order that it might be adapted more effectively to the needs of the Company. This necessitated the revision of certain of the old records and practices and the installation of some new and important records. The work was consciously planned to afford a foundation for systematic personnel studies.[3]

[1] An informal presentation of the system reported in this article was made by Mr. W. H. Vickers at the meeting of Personnel Research Federation, held in New York, May 26, 1923.

[2] Bulletin No. W. 1, of the Scott Company describes "A Procedure in Wage Adjustment," developed for the Pacific Bank in New York City in the year 1920.

[3] The services of the Scott Company, with Mr. L. B. Hopkins in direct charge of the work, were obtained for these purposes.

F.P.

Among the objectives contemplated were the analysis of occupational requirements and the qualifications of employees, the adjustment of individual employees as to salary and occupation, and the development of wage standards, promotional sequences, and methods of control. By January, 1922, the basic records had been prepared and a wage study was undertaken to attain these objectives.

The method followed necessarily reflected the specific requirements and characteristics of the Consolidated Company, but it is believed that essentially the same method can be used in other companies, even in studies embodying different principles of wage determination. Scientific accuracy cannot be claimed for the results which were obtained, because it was necessary to depend upon personal opinions to a considerable degree. They do represent, however, the best available conclusions based upon carefully ascertained facts.

The device which was an outgrowth of this study has been in operation for nearly one year, during which time its effectiveness has been definitely established. To the Management, the Executive Force, and the Personnel Department it has become an indispensable instrument whenever questions arise relating to wages, promotions or transfers.

THE BASIC RECORDS

A brief description of the basic records will be given in order that the method and device, as finally developed for the purpose of wage control, may be better understood.

An Occupational Index was the first record installed. In preparing the Index a brief analysis was made of all the occupations in the Company. The total number of occupations thus discovered, approximately 650, were grouped into 22 General Occupations such as chauffeur, clerk, mechanical worker and electrical worker. A code was prepared for the purpose of identifying each specific occupation and the General Occupation under which it was classified.

After the completion of the Occupational Index, representatives of the Personnel Department consulted the Departmental Executives and obtained facts from which Occupational Descriptions were written. The Descriptions were edited, and approved by the Department Heads and General Department Heads before being typed in their final form.

The Description contains facts which are felt to be necessary in selection, wage determination, and transfers and promotions. Each Department Head is supplied with a set of Descriptions for his Department. Each Interviewer has a set for use in connection with employment, and a complete set, filed in the record office of the Personnel Department, constitutes the "master file."

When an applicant has been employed the information obtained on the Employment Application is transferred to a Qualification Card. This card centralizes facts about the employee which this Company feels are necessary as a basis for making decisions affecting the personnel and

(1354)—1960—4-23 EMPLOYMENT DEPT.

Consolidated Gas Electric Light and Power Company of Baltimore
OCCUPATIONAL DESCRIPTION

NAME OF OCCUPATION Fireman-Boiler Room SYMBOL 0821 DATE April 11, 1923

OTHER NAMES

NAME OF DEPARTMENT Spring Gardens SYMBOL 300 PREPARED BY GDP JR.

Hours

7:00 A. M. to 3:00 P. M. 3:00 P. M. to 11:00 P. M. 11:00 P. M. to 7:00 A. M. Off one day each week. Two weeks on each shift.

Duties and Responsibilities

At the Spring Gardens Gas Manufacturing Plant steam is used for various purposes, such as running engines and pumps, heating the buildings and gas holders and for supplying steam to the generators. The installation consists of eight Babcock and Wilcox boilers with a total capacity of 4300 H.P. Four are hand fired boilers and four are stoker fired boilers.

The Fireman-Boiler Room feeds coal to the boilers, removes the ashes and regulates the boilers so that the steam pressure is kept at a certain point.

On the hand fired boilers the Fireman-Boiler Room spends at least six hours out of the eight shoveling coal from the small cars into the fire box, and one hour in pulling the ashes out onto the floor. During the entire shift he watches his water gauge and pressure gauge, regulates the drafts and sees that the boiler is operating correctly, spending the total of one hour on this work.

On the stoker fired boilers the Fireman-Boiler Room spends one-third of the time in operating the coal scale which fills the hoppers, which in turn supply the automatic stokers. Off and on during the entire day he uses a slicing bar requiring pushing, pulling and lifting to stir up his fire and keep it level, doing this work for a total of about one hour. Half of his time is spent in regulating the automatic stoker and drafts to keep a constant head of steam.

Working Conditions

The Fireman-Boiler Room works entirely indoors where the ventilation is good and light is fair. Due to the continual handling of coal, ashes and soot, it is dirty and dusty. Working in front of the boilers with the doors open makes it extremely hot. The boiler room is next to the turbine room, so there is a continual noise. Due to the very uneven consumption of steam this work is fluctuating and seasonal.

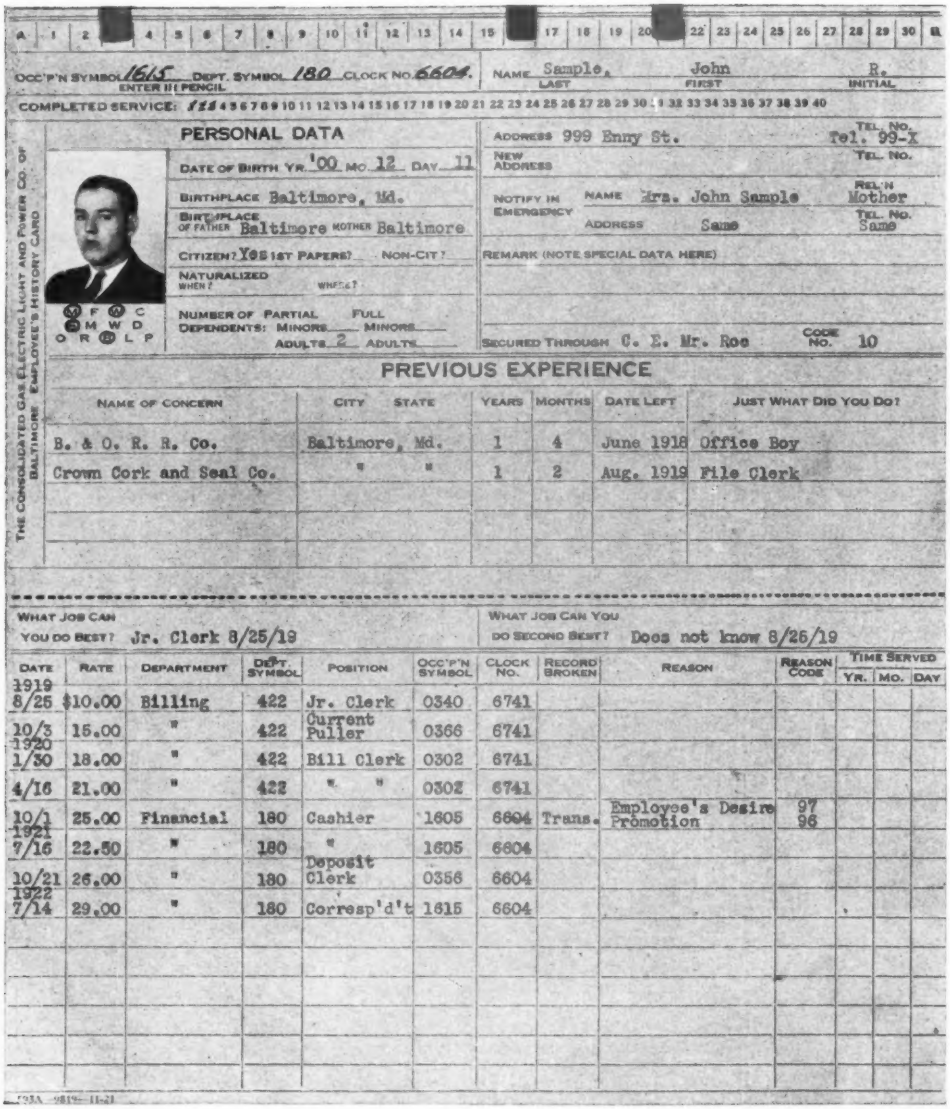
Personal Qualities

A man 22 to 38 years of age is desired. A white man is preferred as this operation is a training for Oiler or Stationary Engineer, while colored men cannot be promoted. Due to the extreme importance of having sufficient steam at all times for use in the generators, the Fireman-Boiler Room should be very reliable. So as to determine when to increase the coal supply or open the drafts

Approved: Department Head Approved: Gen'l. Department Head

FIG. 1. SHOWING THE FORM AND PART OF THE TEXT OF AN OCCUPATIONAL DESCRIPTION

The obverse side contains paragraphs on Opportunities for Advancement, and Sources of Supply. (Original size—8½ by 11 inches.)



THE CONSOLIDATED GAS ELECTRIC LIGHT AND POWER CO. OF BALTIMORE EMPLOYEE'S HISTORY CARD

OCC'P'N SYMBOL 1615 (ENTER IN PENCIL) DEPT. SYMBOL 180 CLOCK NO. 6604. NAME Sample, John R. (LAST, FIRST, INITIAL)

COMPLETED SERVICE: 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40

PERSONAL DATA

DATE OF BIRTH YR. '00 MO. 12 DAY 11

BIRTHPLACE Baltimore, Md.

BIRTHPLACE OF FATHER Baltimore MOTHER Baltimore

CITIZEN? Yes 1ST PAPERS? NON-CIT?

NATURALIZED WHEN? WHERE?

NUMBER OF DEPENDENTS: PARTIAL MINORS ADULTS 2 FULL MINORS ADULTS

M F W C S M W D O R B L P

ADDRESS 999 Enny St. TEL. NO. Tel. 99-X

NEW ADDRESS TEL. NO.

NOTIFY IN EMERGENCY NAME Mrs. John Samole REL'N Mother

ADDRESS Same TEL. NO. Same

REMARK (NOTE SPECIAL DATA HERE)

SECURED THROUGH C. E. Mr. Roe CODE NO. 10

PREVIOUS EXPERIENCE

NAME OF CONCERN	CITY STATE	YEARS	MONTHS	DATE LEFT	JUST WHAT DID YOU DO?
B. & O. R. R. Co.	Baltimore, Md.	1	4	June 1918	Office Boy
Crown Cork and Seal Co.	" "	1	2	Aug. 1919	File Clerk

WHAT JOB CAN YOU DO BEST? Jr. Clerk 8/25/19

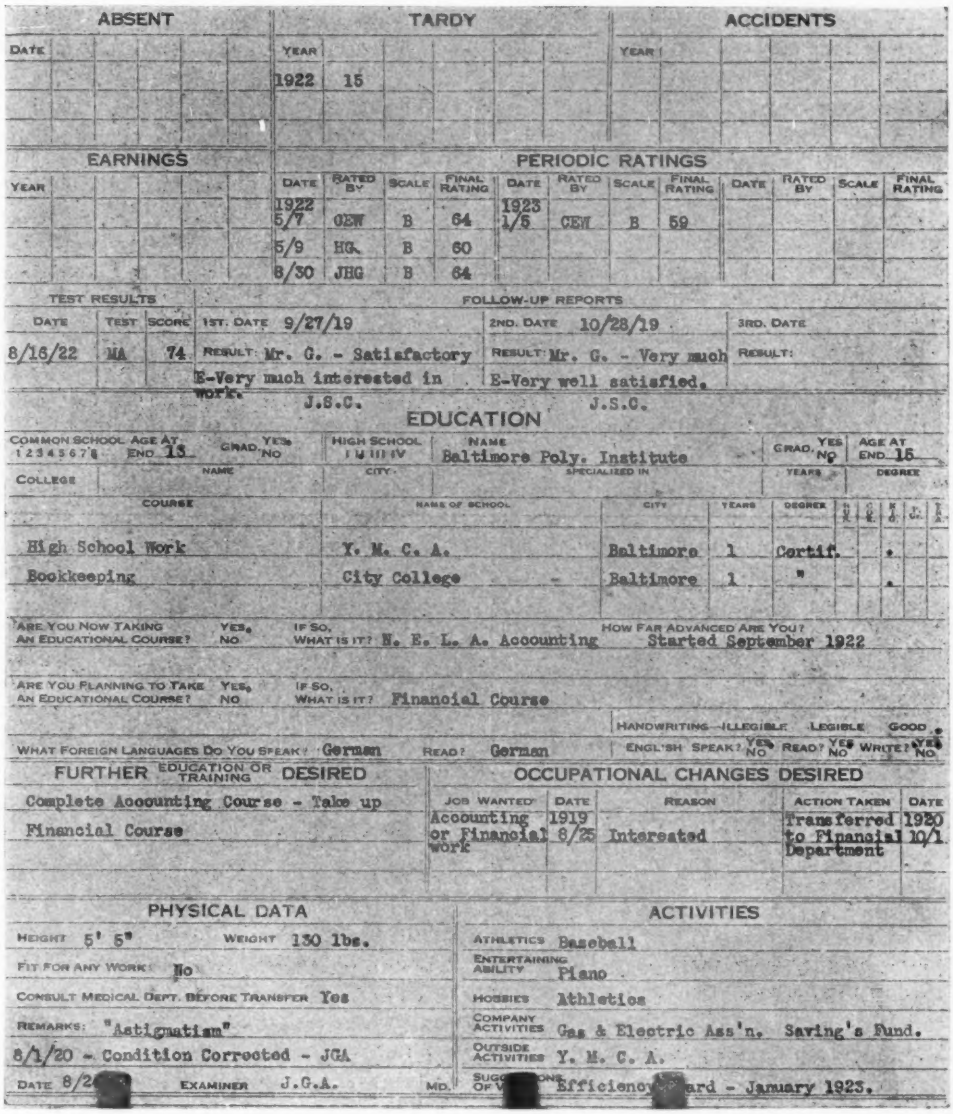
WHAT JOB CAN YOU DO SECOND BEST? Does not know 8/26/19

DATE	RATE	DEPARTMENT	DEPT. SYMBOL	POSITION	OCC'P'N SYMBOL	CLOCK NO.	RECORD BROKEN	REASON	REASON CODE	TIME SERVED YR.	MO.	DAY
1919 8/25	$10.00	Billing	422	Jr. Clerk	0340	6741						
10/3	15.00	"	422	Current Puller	0366	6741						
1920 1/30	18.00	"	422	Bill Clerk	0302	6741						
4/16	21.00	"	422	" "	0302	6741						
10/1	25.00	Financial	180	Cashier	1605	6604	Trans.	Employee's Desire	97			
1921 7/16	22.50	"	180	"	1605	6604		Promotion	96			
10/21	26.00	"	180	Deposit Clerk	0356	6604						
1922 7/14	29.00	"	180	Corresp'd't	1615	6604						

FIG. 2. THE FACE OF A QUALIFICATION CARD FOR AN EMPLOYEE OF THE CONSOLIDATED COMPANY

This card is a tumble head four-page fold. Pages 1 and 4 are shown in this figure. The fold is made on the dotted line. (Original size—8 by 9¼ inches.)

for research purposes. At the time of installation the cards were obtained on the existing personnel of the Company by the Interviewers of the Personnel Department, who held a personal interview with each employee and obtained the desired information by the question and answer



ABSENT

DATE												

TARDY

YEAR												
1922	15											

ACCIDENTS

YEAR												

EARNINGS

YEAR												

PERIODIC RATINGS

DATE	RATED BY	SCALE	FINAL RATING	DATE	RATED BY	SCALE	FINAL RATING	DATE	RATED BY	SCALE	FINAL RATING
1922				1923							
5/7	CEW	B	64	1/5	CEW	B	59				
5/9	HG	B	60								
8/30	JHG	B	64								

TEST RESULTS

DATE	TEST	SCORE
8/16/22	MA	74

FOLLOW-UP REPORTS

1ST. DATE 9/27/19	2ND. DATE 10/28/19	3RD. DATE
RESULT: Mr. G. - Satisfactory E-Very much interested in work. J.S.C.	RESULT: Mr. G. - Very much E-Very well satisfied. J.S.C.	RESULT:

EDUCATION

COMMON SCHOOL AGE AT END 15 — GRAD. YES/NO — HIGH SCHOOL I II III IV — NAME: Baltimore Poly. Institute — GRAD. YES/NO — AGE AT END 16

COLLEGE — NAME — CITY — SPECIALIZED IN — YEARS — DEGREE

COURSE	NAME OF SCHOOL	CITY	YEARS	DEGREE
High School Work	Y. M. C. A.	Baltimore	1	Certif.
Bookkeeping	City College	Baltimore	1	"

ARE YOU NOW TAKING AN EDUCATIONAL COURSE? YES, NO — IF SO, WHAT IS IT? N. E. L. A. Accounting — HOW FAR ADVANCED ARE YOU? Started September 1922

ARE YOU PLANNING TO TAKE AN EDUCATIONAL COURSE? YES, NO — IF SO, WHAT IS IT? Financial Course

WHAT FOREIGN LANGUAGES DO YOU SPEAK? German — READ? German — HANDWRITING: ILLEGIBLE, LEGIBLE, GOOD — ENGLISH SPEAK? YES NO — READ? YES NO — WRITE? YES NO

FURTHER EDUCATION OR TRAINING DESIRED

Complete Accounting Course - Take up Financial Course

OCCUPATIONAL CHANGES DESIRED

JOB WANTED	DATE	REASON	ACTION TAKEN	DATE
Accounting or Financial work	1919 8/25	Interested	Transferred to Financial Department	1920 10/1

PHYSICAL DATA

HEIGHT 5' 5" — WEIGHT 130 lbs.

FIT FOR ANY WORK: No

CONSULT MEDICAL DEPT. BEFORE TRANSFER: Yes

REMARKS: "Astigmatism" 8/1/20 - Condition Corrected - JGA

DATE 8/2[illegible] EXAMINER J.G.A. MD.

ACTIVITIES

ATHLETICS: Baseball

ENTERTAINING ABILITY: Piano

HOBBIES: Athletics

COMPANY ACTIVITIES: Gas & Electric Ass'n. Saving's Fund.

OUTSIDE ACTIVITIES: Y. M. C. A.

SUGGESTIONS OF V[illegible]: Efficiency [illegible]ard - January 1923.

FIG. 3. THE INSIDE OF THE QUALIFICATION CARD SHOWN IN FIGURE 2

method. The series of numerals at the top of the card refer to the code numbers which designate the General Occupations under which the occupations have been classified. Different colored tabs are placed on these numerals to indicate certain facts as to the employe's qualifications on

his present occupation and certain probabilities as to his success on other occupations of the Company. The Qualification Cards are filed alphabetically by departments in the Personnel Department.

The Scott Company's Graphic Rating Report on Workers and their Graphic Rating Scale for Executives and Supervisors are both used in this Company. As there are no "piece rate" occupations and individual production records are not available, these ratings play a most important part in the personnel control system. Before the ratings were put into use it was necessary to depend upon the opinion of the Supervisor formed at the moment a decision was imminent. Now it is possible for the Supervisor to quietly think about the effectiveness of each worker in his occupation before recording his judgment. As the Supervisor fills out the Graphic Rating Report his opinions are unconsciously subjected to a systematization which results from the very structure of the rating form. By means of a scale the opinions as to each quality are transcribed into numerical scores which are totaled, and posted on the Qualification Cards. Each rating report is then filed in the employes' record envelope.

It cannot be claimed that these records afford the same exactness which records can give of inanimate objects, but it is believed that they do present pertinent facts in regard to the occupations, the workers and the adjustment of the workers to their occupations; that they have an unusually fine degree of exactness due to the adequacy of the methods of ascertainment and recording; and that they are sound material for systematic and ordered thinking.

THE METHOD

The assumption was made at the outset that the existing wage differentials between occupations, and between employes would be considered right until it was demonstrated that they were wrong. It was felt that a careful study to determine the causes underlying the amounts and distributions of existing salaries would uncover significant data for the formulation of standards. The first step toward this end was the presentation of existing conditions. For this purpose a chart was constructed for each department, across the top of which numerals were arranged at regular intervals to indicate the salary scale in dollars per week or cents per hour. For convenience the chart was mounted by means of thumb tacks on a piece of "compo-board" about three feet square. The average pay for each occupation was determined and the occupational titles were placed on the left margin of the chart with the occupation having the highest average placed first, the occupation with second highest average second, and so on. Red map pins indicating male workers and yellow map pins indicating female workers were inserted on a line with the occupations at points below the salary scale which represented the actual rate of pay of each employe.

Base labor rates were taken as the point of departure and extensions therefrom were determined by apply-

(1286)—9426—7-22

Employment & Personnel

(SCALE B)

GRAPHIC RATING REPORT ON WORKERS

Name of Employee JOHN R. SAMPLE.

Position of Employee CORRESPONDENT. Department FINANCIAL.

Employee Rated By C.E.W. Date 1/5/23.

Instructions for Making Out This Report:—Rate this employee on the basis of the actual work he is now doing. Before attempting to report on this employee, it is necessary to have clearly in mind the exact qualities which are to be reported on. Read the definitions very carefully. In each quality compare this employee with others in the same occupation in this company or elsewhere. Place a check (✓) somewhere on the line to indicate this employee's standing in each quality. It is not necessary to put the check (✓) directly above any of the descriptive adjectives.

QUALITIES	REPORT					
I. **Ability to Learn:** Consider the ease with which this employee is able to learn new methods and to follow directions given him		✓ Learns With Ease	Ordinary	Slow To Learn	Dull	9
II. **Quantity of Work:** Consider the amount of work accomplished and the promptness with which work is completed.	Unusually High Output	✓ Satisfactory Output		Limited Output	Unsatisfactory Output	8
III. **Quality of Work:** Consider the neatness and accuracy of his work and his ability constantly to turn out work that is up to standard.	✓ Highest Quality	Good Quality		Careless	Makes Many Errors	10
IV **Industry:** Consider his energy and application to the duties of his job day in and day out		✓ Industrious		Indifferent	Lazy	9
V. **Initiative:** Consider his success in going ahead with a job without being told every detail; his ability to make practical suggestions for doing things in a new and better way	Very Original	Resourceful	✓ Occasionally Suggests	Routine Worker	Needs Constant Supervision	6
VI. **Co-operativeness:** Consider his success in effectively co-operating with his co-workers and with those exercising greater authority		✓ Co-operative		Difficult to Handle	Obstructionist	9
VII. **Knowledge of Work:** Consider present knowledge of job and of work related to it	Complete	✓ Well Informed	Moderate	Meagre	Lacking	8

REMARKS:—(See Reverse Side for Suggestions)

Total 59.

Final Rating

FIG. 4. A GRAPHIC RATING REPORT WHICH HAS BEEN FILLED OUT AND SCORED

On the obverse side the purpose of the periodic rating reports is explained. (Original size—8½ by 11 inches.)

ing the principles of relative rating to each occupation.

An Investigator of the Personnel Department, with the aid of the Occupational Descriptions and the Qualification Cards, analyzed the duties and responsibilities of each occupation, the qualities required to perform the work, the qualifications of the employes who were working on the occupation, and the character of the adjustments existing between the employes and the occupations. From this study sufficient evidence was discovered for an evaluation of the occupations based upon such factors as, the amount of general education and the amount and character of previous experience required, the length of time required to become proficient in the work, the degree of accuracy, judgment, supervisory ability, and initiative required, and the working conditions.

In determining the relative importance of the occupations these factors were not weighed by means of a job rating scale. The aim of the Investigator was to allow each essential element in the occupation to exert its appropriate influence in the formation of his reasoned conclusion. As he formed his decision as to the appropriate minimum and maximum pay for an occupation, he placed blue map pins on the chart at the proper points.

A conference was then held with the Department Head, for the purpose of testing the validity of the Investigator's judgment. The Investigator explained in detail the purpose of the study, and the procedure and data involved in setting the tentative wage limits. In the discussions which followed the limitations were tried by reference to:

a. The facts set forth in the Occupational Descriptions and Qualification Cards.

b. The Department Head's intimate knowledge of the work and workers derived from direct observation.

c. The importance of each occupation in relation to the other occupations.

The blue pin representing the minimum rate of pay was moved to the right or to the left, when the decision of the conference indicated that the Investigator had placed the minimum too low or too high. The position of the blue pin representing the maximum was examined and treated in the same way. By this method each judgment was matched by at least one other judgment and both judgments were guided and held in check by undisputed facts of record.

A new chart was prepared to embody the results of these discussions. The blue map pins were removed and rectangles were drawn, the vertical lines of which represented the minimum and maximum rate of pay deemed appropriate for each occupation. A median line in red was then drawn vertically through the rectangle. The median lines were used for assigning the order of the arrangement of the occupations on the chart, viz., from highest "mean" at the top to lowest "mean" at the bottom. If the median line for one occupation stood further to the right than that of another, the relative positions of the two indicated the

judgment of the conference that the one occupation was of greater importance than the other.

A second conference, attended by both the Department Head and the General Department Head, was held in order to review the revised chart, establish a promotional sequence, and discover cases of maladjustment. The positions of the occupations were considered to determine whether their final order corresponded with their relative importance. If any discrepancies appeared they were discussed and corrected in accordance with the principles and procedure originally used. Each occupation was considered to ascertain whether the experience and training gained therein could be utilized in the more important occupations and the code numbers were entered to the right of the occupation to indicate any such normal lines of promotion. The majority of the pins representing employees were scattered along between the minimum and maximum sides of the rectangles. However, some pins were below the minimum and others above the maximum. These cases were carefully discussed with the Department Head and the exact status of each employe was ascertained. If the case required special attention as to salary or occupational adjustment the facts were set forth on an Employes' Adjustment Card. These cards supplement the Qualification Card and serve as a follow-up on the case. Such information as the employe's progress or the efforts of the Personnel Department to arrange a transfer are posted on the card from time to time until adequate adjustment is finally made. In all such cases the red or yellow pins were removed and black or green pins substituted in order to draw attention to the need of adjustment. Similar cases uncovered within the rectangles were handled in the same manner.

These discussions, which involved a reasoned agreement as to the relative importance of each occupation and the status of each employe, were very instructive to the departmental executives and demonstrated to them the practicability of the information which was available in the Personnel Department.

After approval by the General Department Head and finally by the Management of the Company the chart was ready to be set up in permanent form.

With the Control Charts for single departments completed, the study will be concluded by constructing a series of charts showing the situation in identical or similar occupations irrespective of department in order to standardize throughout the Company the rates of pay for the same grades of work.

The same study will lead to a promotional sequence that will cover the whole Company rather than individual departments. When such sequences have been disclosed the question of specific training for specific duties can be more intelligently approached.

THE MECHANICAL DEVICE OR CONTROL CHART

The next step was to construct a device for graphically setting forth

the findings of the study in permanent form. It was apparent that all of the factors involved would be continually subject to change. It might be necessary to add a new occupation, in which case it would have to be placed on the chart in a definite position to represent its relative importance, or again an existing occupation might be removed, or an occupational title, a promotional sequence, or a salary range changed. It was obvious that if provision was not made to accommodate these changes the charts would soon cease to serve their function of clear, graphic presentation of the relative values of the occupations. Flexibility therefore was a prime requisite in order that the records might be maintained with neatness, accuracy and minimum effort.

The mobility of the employes was readily taken care of by the use of the map pins. In order to provide for the occupational changes it was decided to use a separate unit or strip for each occupation. Sheets of paper 17½ inches wide by 20½ inches long were printed with vertical lines. On the left a blank space 2 inches wide was left to provide for the occupational titles. Next to this space, two vertical sections, each ½ inch wide were ruled off; one for the promotional sequences and the other for any data which might be pertinent, such as the amount of the payroll represented by the pins, whether the occupation was on a shift basis, or the number of hours worked per week on that occupation. Then follows a series of twenty sections ruled off by heavy lines ⅝ inch apart, each section containing nine lines $\frac{1}{16}$ inch apart. These sections provided for the salary scale and the plotting of salary ranges which had been established by the study.

The printed sheets were mounted on cardboard about $\frac{3}{16}$ inch thick, then laquered to provide a glazed waterproof surface, and finally cut into strips ⅝ inch wide. It was not necessary to rule horizontal lines between the occupations because the lines of separation where the strips butted together fulfilled this requirement. The laquered surface used with soluble drawing inks makes it possible for the lettering to be washed off and changes made in the titles, promotional sequences and salary ranges. Plain strips without rulings were prepared to provide for the departmental titles and salary scales.

The strips are placed in drawers measuring approximately 18 by 20½ inches. The drawers are faced with oak about 1 inch deep. The sides are fitted so that the drawers will slide into a filing cabinet, and the bottom of the drawers are made of thin but substantial wood. Screwed to the left side of the drawer there is a piece of angle brass to hold the end of each strip. On the right side there is a brass spring hinge screwed to the bottom of the drawer. To insert the strips the spring is held up, the left ends of the strips pushed under the angle brass on the left, the strips laid on the bottom of the drawer, and the spring hinge released. Allowing one strip for the name of the department and the salary scale, each drawer provides for 29 occupations.

The permanent chart was now in shape to receive the data contained on the work charts used in connection with the study. By allowing each section to represent $2.00 per week or 5 cents per hour (with each intermediate line representing 20 cents per week or ½ cent per hour) a salary scale of $40.00 on a weekly basis or $1.00 on an hourly basis was available. It was found from the wage study that this would afford a scale large enough for practically all departments. When hourly and weekly rated occupations occurred in the same department two scales were used, one figured on an hourly basis was entered above the other figured on a weekly basis. On a forty-four hour per week basis there was only one point at which the scales coincided, namely, 50 cents per hour and $22.00 per week, but it was believed that for practical purposes the differences in the scales would not present any difficulty, and experience has demonstrated this to be the case. The hourly rated scale and titles of all hourly rated occupations were entered in red ink, while black ink was used for the weekly scale and weekly rated occupations so that at a glance one can know to which scale to refer.

The occupational codes indicating the promotional opportunities offered by the occupation were entered in the space provided to the right of each occupation. Rectangles representing the salary ranges were drawn in, in black ink between the appropriate points on the scale. The median line was drawn in red ink.

Small map pins with a head about $\frac{3}{32}$ inch in diameter and a point ⅜ inch long were used. Seven of these pins can be conveniently inserted at any rate on any occupation. Where there are more than seven employes, a white rough surface tack (⅜ inch diameter) is inserted to the right of the rectangle, the number written on the tack, and an arrow drawn from the tack to the one map pin which is inserted to represent all the employes at that rate of pay.

An oak cabinet measuring approximately 3½ feet wide, 2½ feet high and 2 feet deep was designed to accommodate forty drawers in two columns of twenty drawers each. To facilitate filing and reference a series of corresponding numerals (1 to 40) was placed on the drawers and on the cabinet. By means of a strip of wood fitted down the middle of the cabinet and overlapping the inside edge of each row of drawers, all of the drawers can be locked when not in use. When the charts are used for conference or study, they are placed on easels specially made for the purpose. A leather sling with handles is used whenever it is necessary to carry several charts at the same time. A drawer weighs about 4 pounds.

THE CONTROL CHART IN USE

After the completion of the Control Chart for a department, three photostats were taken, and colored to correspond with the original chart. A departmental census of occupations and employes was prepared on the same day that the photostats were taken. A set of Occupational Descriptions for the department, a photostat of the Control Chart, and a copy of the census were then for-

FIG. 5. A CONTROL CHART SHOWING THE SPRING HINGE WHICH HOLDS THE CARDBOARD STRIPS IN PLACE

By lifting the hinge the strips can be removed and rearranged in any order that is necessary. The charts measure 18 by 20½ inches and weigh about 4 pounds.

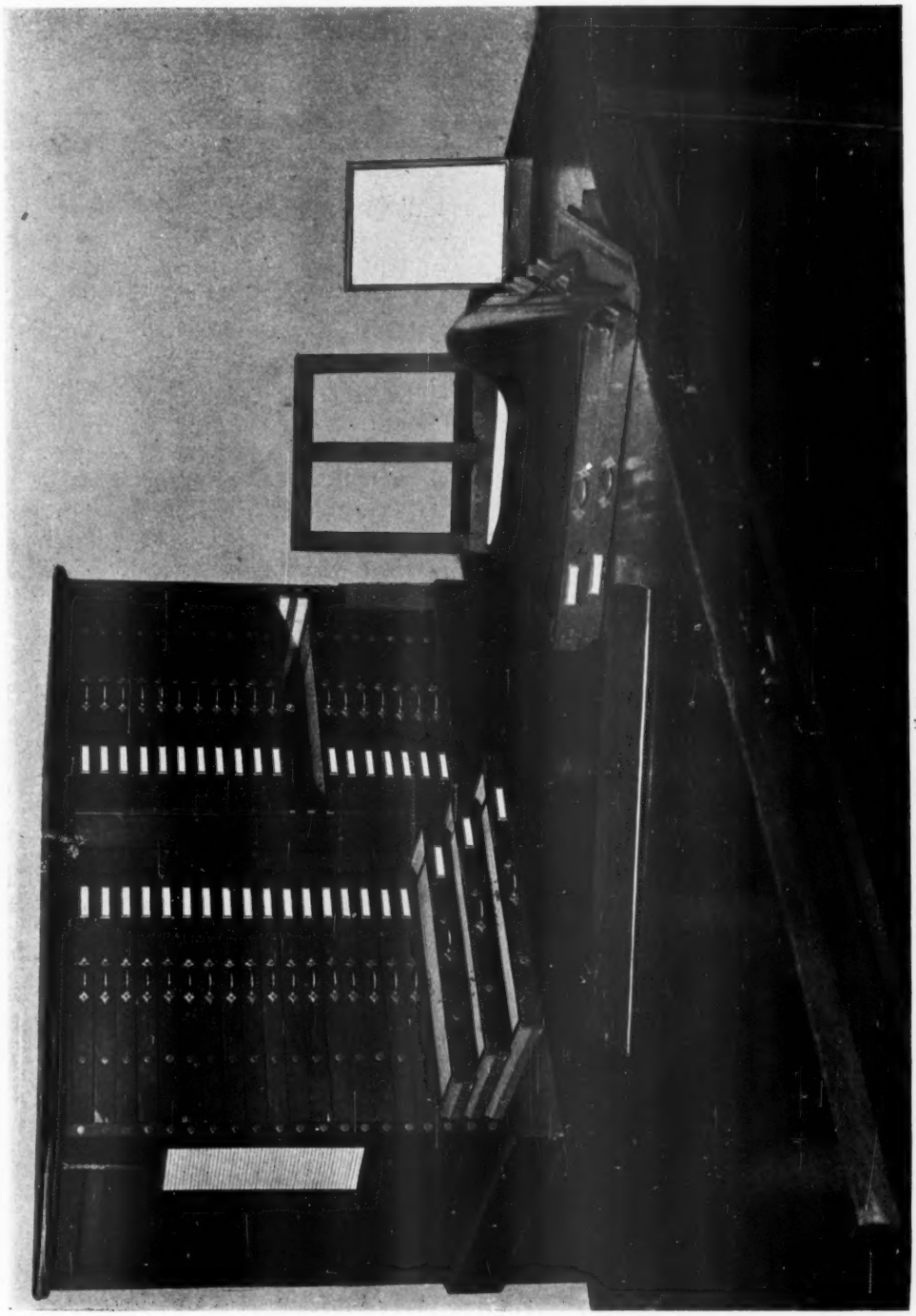


FIG. 6. THE FILING CABINET WITH APPURTENANCES

warded to the General Department Head and the Department Head. Photostats are prepared and distributed semi-annually but in the interim the Department Head is urged if possible to keep his photostat up to date. In departments where the turnover is comparatively high, it is impracticable for the Department Head to make the changes on his photostat and in such cases the photostat is being mounted on a small bass wood board on which map pins can be used.

A copy of each photostat is being filed departmentally in the Personnel Department. It is believed that these photostats will become increasingly valuable records for the study of salary distributions and tendencies whether by occupations, departments or for the Company as a whole.

The Control Chart has become the pivotal record of the Personnel Department. It reveals the employe's relationship to his occupation, his wage, and his fellow workers. At any given time the color of the pin representing the employe and its location on the chart indicates the quality and degree of adjustment involved in these interrelationships. These facts exercise an important influence upon the decisions which are made at the time of increase, transfer, or promotion.

Proposals for establishing new salary ranges or changing existing ranges may be initiated by a Department Head or by the Personnel Department. In such cases practically the same method of study and the same procedure are followed as when the charts were originally prepared.

When a Department Head wishes to change an employe's rate of pay he forwards to the Personnel Department a Change of Rate Ticket supported by a written memorandum setting forth in detail his reasons for the recommendation. The Control Chart for the department, the Occupational Description for the occupation on which the worker is engaged, his Qualification Card, Adjustment Card, and the Graphic Ratings are assembled as evidence and placed in the hands of the Personnel Manager. In addition to these records the Personnel Manager also has a departmental graph showing the actual payroll, the number of employes, and the average monthly earnings per employe from month to month. In order to readily identify the employe whose change of rate is under consideration, a small celluloid map ring is placed upon the pin which represents him on the chart.

With the Control Chart before him the Personnel Manager studies all of the evidence. The Qualification Card tells him the date and the amount of the employe's last increase in pay. The Occupational Description tells him the Qualifications necessary for success on the occupation, and the Graphic Ratings reveal to what extent the employe has developed those qualifications. The Occupational Description tells him the educational requirements of the occupation and the Qualification Card reveals whether the employe has the necessary education or is acquiring it by supplementary study. Thus he forms an opinion as to whether the increase in pay is justifiable so far

as the individual himself is concerned. By noting the position to which the proposed increase will move the pin, he can form an opinion as to whether, in view of the employe's capabilities and performances, the proper wage relationship between the employe and the occupation would be effected by the change. The proposed movement may place the employe ahead of several other employes and by reference to their Qualification Cards and Graphic Ratings the Personnel Manager can determine whether this particular employe should be promoted above the other workers.

The distribution of existing salaries on these occupations is also noted. The movement of one or more of the pins to the right, especially if they pass the median line, of the salary range, may make the payroll for a particular occupation top heavy and involve the risk of spending an undue amount of money on that occupation in comparison with other occupations in the same department, and in comparison with the amount of money spent in similar occupations in other departments.

If after his study the Manager is convinced that the increase in pay should be granted, he signs the Change of Rate Ticket and forwards it to the General Department Head for his approval. In case the three are agreed the increase is made effective by sending it to the Payroll Department. The Personnel Department then indicates the new rate of pay for the employe by moving his pin on the control chart to its new position.

In case the Personnel Manager does not concur in the recommendation, he returns the Change of Rate Ticket to the Department Head accompanied by a letter giving in full his reasons for failing to concur. In this case the Department Head, provided he is not convinced by the reasoning of the Personnel Manager, may appeal to his General Department Head. The General Department Head may be convinced that the change of rate is not warranted, in which case the matter drops. If he still agrees with the Department Head, he may hold a conference with the Personnel Manager in the hope that they may come to an agreement, or he may appeal the matter directly to the Management of the Company.

It must not be supposed that the careful study which has just been described is necessary in every case. Many cases are clear cut and require little investigation. The care with which the Department Head has studied the case with his photostat copy of the control chart as a background, and the character of the evidence which he submits with his recommendation will reduce the amount of investigation to be made by the Personnel Manager.

Quite often the Department Heads confer with the Personnel Manager before making their recommendations and together they consult the control charts. By this procedure agreement is commonly reached before the formal recommendation is submitted. If an agreement is not reached, the points of disagreement are at least clear in the minds of both.

FIG. 7. THE CONTROL CHARTS ARE CONSTRUCTED ON A SCALE LARGE ENOUGH TO MAKE THEM PRACTICAL FOR CONFERENCE STUDY
The payroll changes are periodically reviewed by the Management with the Control Charts before them

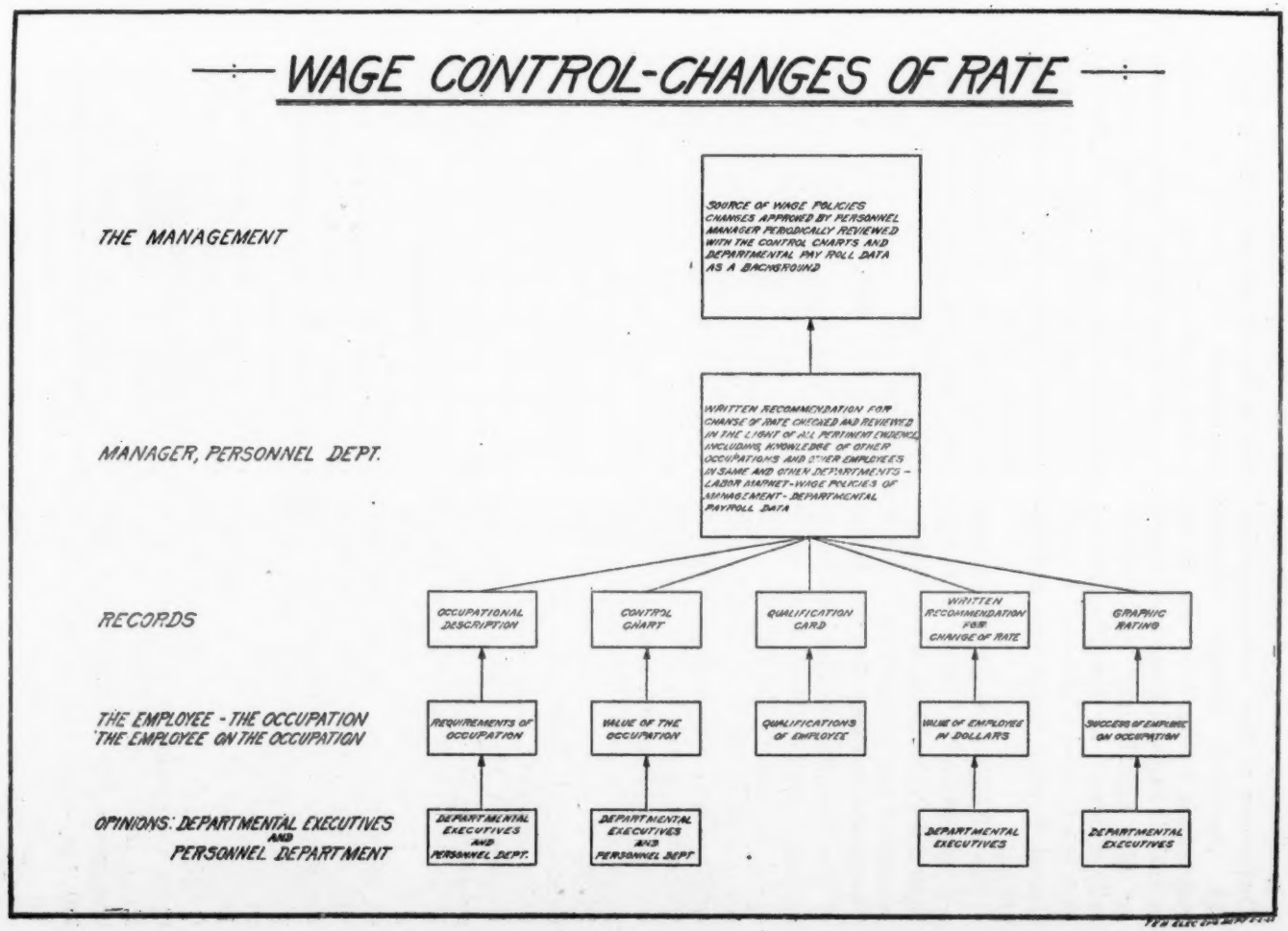

WAGE CONTROL-CHANGES OF RATE
THE MANAGEMENT
SOURCE OF WAGE POLICIES CHANGES APPROVED BY PERSONNEL MANAGER PERIODICALLY REVIEWED WITH THE CONTROL CHARTS AND DEPARTMENTAL PAY ROLL DATA AS A BACKGROUND
MANAGER, PERSONNEL DEPT.
WRITTEN RECOMMENDATION FOR CHANGE OF RATE CHECKED AND REVIEWED IN THE LIGHT OF ALL PERTINENT EVIDENCE INCLUDING KNOWLEDGE OF OTHER OCCUPATIONS AND OTHER EMPLOYEES IN SAME AND OTHER DEPARTMENTS - LABOR MARKET - WAGE POLICIES OF MANAGEMENT - DEPARTMENTAL PAYROLL DATA
RECORDS
OCCUPATIONAL DESCRIPTION
CONTROL CHART
QUALIFICATION CARD
WRITTEN RECOMMENDATION FOR CHANGE OF RATE
GRAPHIC RATING
THE EMPLOYEE - THE OCCUPATION
THE EMPLOYEE ON THE OCCUPATION
REQUIREMENTS OF OCCUPATION
VALUE OF THE OCCUPATION
QUALIFICATIONS OF EMPLOYEE
VALUE OF EMPLOYEE IN DOLLARS
SUCCESS OF EMPLOYEE ON OCCUPATION
OPINIONS: DEPARTMENTAL EXECUTIVES AND PERSONNEL DEPARTMENT
DEPARTMENTAL EXECUTIVES AND PERSONNEL DEPT.
DEPARTMENTAL EXECUTIVES AND PERSONNEL DEPT
DEPARTMENTAL EXECUTIVES
DEPARTMENTAL EXECUTIVES

FIG. 8. CHART SHOWING THE RECORDS ASSEMBLED TO AFFORD A FACTUAL BASIS FOR DECISIONS INVOLVING CHANGES IN RATES OF PAY

In all cases whether he approves or disapproves of the recommendation, the Personnel Manager dictates memoranda setting forth his reasons in each instance. These memoranda are filed alphabetically and periodically reviewed by the Management with the Control Charts and Departmental Payroll Graphs as a background.

The manner in which the records are assembled to afford a factual basis for decision involving changes in rates of pay is shown by Figure 8. This chart also shows that the opinion of the Department Head plays an important part in the ultimate source of all but one of the records. This one record is the Employees Qualification Card, which is formed by statements made by the applicant before employment and by data posted on the card from time to time by the Personnel Department. The Occupational Description is a detailed statement of the opinion of the Department Head regarding the occupation upon which the employe is working, and the Control Chart shows his decision as to the value of of the occupation. In the preparation of these records the opinions of the Personnel Department have also played an important part and tended to systematize the opinions of the Department Heads. In a sense the Graphic Rating Report depends solely upon the opinion of the Department Head regarding the success of the employe in the occupation, but here too the systematizing influence of the Personnel Department is present; in this instance it is inherent in the Graphic Rating Form upon which the Department Head projects his opinion.

The recommendation for a change in rate is based solely upon the opinion of the Department Head and in reviewing such cases it is the function of the Personnel Department to analyze this opinion in order to ascertain whether it is consistent with the conclusions which the Department Head has previously made a matter of record.

SUMMARY

Pertinent facts, concerning occupations and workers, have been ascertained from experience and direct observation and carefully recorded. Opinions as to the occupations, the employes, and the resulting relationships have been systematized by the recorded facts and a method involving controlled dialectics, and thus transformed into the best available reasoned conclusions. Certain of these facts and conclusions have been presented in permanent graphic form. Their juxtaposition visually portrayed by means of the Control Charts has produced a serviceable instrument of personnel control in matters involving wages, transfers, and promotions.

The records have their defects; the conclusions undoubtedly embody some inaccuracies; none of the problems have yet been solved; they have simply been brought into the light to the end that immediate decisions and further study may be made more intelligently.

Personnel Research Federation

Report of Annual Meeting

By Alfred D. Flinn, *Secretary*

THE postponed annual meeting of the Personnel Research Federation was held on May 26, 1923, in the Engineering Societies Building, New York City.[1] The morning session was opened with a brief address by Chairman Robert M. Yerkes, in which he reviewed the history, purposes and progress of the Federation since its inception on March 15, 1921.

INTELLIGENCE TESTS COMPARED WITH COLLEGE RECORDS

Professor Richard W. Husband, Director of Personnel Research at Dartmouth College, gave a talk on: *Four Studies in Student Personnel at Dartmouth:*[2]

a. The present condition of scholarship in Dartmouth College as related to Intelligence Tests.

b. The history of students who entered college under seventeen years of age.

c. Scholarship in the Freshman Class compared with

1. *Scholarship in Preparatory School*
2. *Record for Industry in Preparatory School*

d. Performance in Intelligence Test in Freshman year compared with estimate of Industry in Preparatory School.

The history of students who have entered Dartmouth College under seventeen years of age shows that in almost every respect their college course is superior to that of those entering at a later age, except possibly in athletics; investigation into their history after graduation is not yet completed. Charts showed (*a*) that mental alertness tests are a fairly accurate means of prediction as to how students will get along in college, (*b*) that scholarship in the first semester of freshman year harmonizes closely with scholarship in preparatory school, and (*c*) that a student's record for industry or application in school harmonizes closely with his scholarship in the first semester of his freshman year and that one who stands below the middle of his class in industry and scholarship is not a good prospect for college. Other charts setting forth the present scholarship condition of students who entered Dartmouth College with the classes of 1923, 1924, 1925 and 1926 were shown.

[1] For list of persons present, see page 28.

[2] An account of Professor Husband's work at Dartmouth College will appear in Volume II, No. 2, of The Journal of Personnel Research.

RELATION OF STUDENT PERSONNEL OFFICE TO INDUSTRIAL PERSONNEL RESEARCH

Dr. W. V. Bingham, Director of the Division of Coöperative Research, Carnegie Institute of Technology, presented a paper on: *The Student Personnel Office and Its Relation to Coöperative Research in Industrial Personnel*,[3] in which he outlined the importance and activities of a university institute of personnel research. He drew attention first to the now generally recognized need for a student personnel office in each of our universities and colleges. Such offices should help the student find himself by pointing out the opportunities and types of work open to him and by indicating to him, insofar as possible, the kind of work for which his abilities would seem to qualify him. To supply the information necessary to give these offices a scientific background and make them of real value, research is necessary, and for this purpose such offices should be flanked with strong research agencies to supplement and improve personnel practices. In addition, these research departments need and can command the coöperation of large business and industry. Dr. Bingham continued with a statement of both the remote and immediate value of such a plan to the universities and to society as a whole, and in conclusion summarized the activities of a university institute of personnel research.

In the discussion following Dr. Bingham's paper, mention was made of the material which the large engineering societies had been obtaining from their members regarding their professional careers, indicating not only the character of the work which each man had been doing but also his approximate success at it.

In reply to a statement by Mr. Brimhall that there seemed to be little connection between the work now being done in the grammar schools and high schools to start the selection processes and that being done in the universities and colleges afterwards, Professor Husband called attention to the fact that the National Vocational Guidance Association was supposed to include those interested in the education of students in grammar school, high school and college. He also drew attention to the specialized groups here and there throughout the country who are greatly interested in outlining the qualifications and professional training necessary for a number of different occupations.

As typical of these specialized groups, Mr. Wickenden cited the electrical engineering group. He spoke of the endeavor of the National Industrial Conference Board in conjunction with the Society for the Promotion of Engineering Education to launch a program for engineering education, of the need for a study of the relation of the supply of electrical engineers to the demand, and of a paper which he was preparing on the results of an inquiry into the utilization of college graduates in the telephone industry of the United States.

Mr. Frayne alluded to the rehabili-

[3] Dr. Bingham's paper will appear in Volume II, No. 2, of The Journal of Personnel Research.

tation work of the Veterans' Bureau as an example of a place where proper vocational guidance was of great importance and where in his opinion it was not wholly satisfactory as conducted in the past.

Dr. L. L. Thurstone sketched briefly the work which the Bureau of Public Personnel Administration is undertaking in aiding the United States Civil Service Commission on personnel problems, including the conducting of experiments on the improvement of examination procedure.

Mr. Clothier spoke of the research which had been done by the Scott Company—phases of research which have had to do more particularly with mental alertness tests as applied to rating schedules, occupational descriptions and wage control.

PERSONNEL CONTROL IN A PUBLIC UTILITY

Mr. Vickers concluded the morning session with an informal account of *Personnel Control at the Baltimore Consolidated Gas, Electric Light and Power Company,*[4] in which he described the methods, equipment, and actual functioning of the personnel control system in use in their company.

REPORT OF SECRETARY

The afternoon session was opened with reports by the officers of the Federation's activities during the past year. The following are excerpts from the report of the Secretary:

Whatever road the Personnel Research Federation may travel from this day forward, it has made an important contribution to progress in the field. Although inconspicuous, its work has been substantial and the results should prove permanent. The conferences which led to the establishment of the Federation and the meetings of the Federation itself have brought into helpful relations, groups and individuals which would not otherwise have met.

With the aid of Williams & Wilkins Company, the Federation has published a journal of which any organization might well be proud. The contents have been of a high character, have attracted the attention of thoughtful readers, and must be considered a lasting contribution to the advancement of the sciences of personnel. Many good friends of the cause and of the Federation have contributed liberally, but without the excellent personal services of the Editor-in-Chief and the Managing Editor, the Journal of Personnel Research could not have been created or maintained.

One of the most notable things in connection with the Federation has been the generous gift by Mr. Outhwaite of his highly valuable services as Director and as Editor, not only without compensation, but at personal expense, since September, 1921. It has been a notable gift quietly given.

REPORT OF DIRECTOR AND EDITOR-IN-CHIEF

The Director in his report called attention to one or two features of the Federation's work which he felt merited particular emphasis: the exploring of the general field of personnel research; the launching of the JOURNAL OF PERSONNEL RESEARCH, important not only because of the high standard of the material which it has been able to publish and because of the fact that it has been bringing to light significant articles that were developed as long ago as 1918–1919 but which have not hitherto secured

[4] An account of the Personnel Control System at the Baltimore Consolidated Gas Electric Light and Power Company, written by Mr. Vickers' associate, Mr. D. B. Van Hollen, appears on page 000 of this issue of the JOURNAL.

the attention so amply deserved, but also because of its potential opportunity for service as a background of information against which future personnel men may judge and measure their own progress; the establishment of the Personnel Research Series, of which *Job Analysis and the Curriculum*, by E. K. Strong, Jr., and Richard S. Uhrbrock, is the first number; the encouragement of the establishment of local research centers; and finally the service of the Federation to organizations with which it is not directly affiliated. Members of the Federation have given largely of their time in service on committees of other organizations and the Federation has pursued a policy of giving information wherever there seemed to be real need for it, irrespective of affiliation.

RESEARCHES OF MEMBERS AND GUESTS

Following the reports of the officers brief statements of the research activities of members and guests of the meeting were presented.

Mr. Milton Fairchild, Director of the Character Education Institute, sketched the history and organization of that institution, calling attention to the need for a study of the causes of human action.

Mr. Frank B. Gilbreth, President of Frank B. Gilbreth, Inc., recounted briefly some of the research work which he had been doing, but had not yet had time to publish:

1. Micromotion studies were made of epileptics in seizure, and also of sub-normals who were known to be epileptics. Although the study has not been completed, results indicate (*a*) that the motions of the epileptic in seizure are not miscellaneous and tangled but are outward and visible signs of forms of behavior which can be identified with the individual's life work, and (*b*) that the motions of the sub-normal epileptic are identical with the motions of the absent-minded normal. The studies would seem to indicate that epilepsy is after all only a question of the degree to which one possesses epileptic tendencies. Mr. Gilbreth pointed out the advisability of making the proof of safety provisions the protection attained for the man who, though not a recognized epileptic, is subject to slight spells or seizures, even as short as five seconds duration. Make machines not only fool-proof but epileptic-proof

2 Micromotion studies of blueberry, huckleberry and cranberry picking, as representing a simple but centuries-old form of occupation, indicate that man has no inherited instinct as to the best method by which to do his work.

Mr. Frayne, of the American Federation of Labor called attention to the following organizations and studies:

1. *Health of Painters in New York*, a concrete, intensive study by the Health Department of the Brotherhood of Painters, Decorators and Paperhangers of America of the health facts in that industry, with particular emphasis on the effect of lead poisoning as an occupational disease.

2. The establishment by the *Ladies Garment Workers*, coöperatively with the manufacturers, of a health center for workers in their trade. Provisions have been made for dealing with every phase of health work, and results show a greater efficiency on the part

of the workers as well as a much higher standard of health.

3. The work of the *Board of Sanitary Control*, established in 1910, and financed by both the union and the manufacturers. The Board establishes standards for sanitation, safety, and general working conditions and sees that these standards are followed. It also maintains a school where members are taught English and given additional training along specific lines.

4. The work of the *Workers' Education Bureau.*

5. The progress of the *National Committee on Prisons and Prison Labor* in: enactment of legislation providing for a system of prison labor whereby the training of prisoners and the output of the prisons would not be in competition with free labor or free industry; establishment of systems whereby State is consumer of own prison manufactured products; encouragement of institutions to teach their men the kinds of work peculiar to the locality in which they are situated; organization of coöperation on the part of employers in hiring men just out of prison; and the creation of a realization among employers that the discouragement of men by keeping them out of work for infractions of the law, for which they have already paid in prison, is the wrong method of improving society.

Mr. W. E. Wickenden, Assistant Vice-President of the American Telephone and Telegraph Company, stated that it was his belief that large industrial organizations were likely to be interested in and to make use of the types of personnel research that relate to (*a*) vocational counsel, (*b*) adaptation of individuals to their work, (*c*) research that would make possible the standardization of payment for services rendered, (*d*) influence of industrial maladjustment or of temperament on the feeling of persons toward their work, and (*e*) questions of mental hygiene. He also suggested that adequate scientific evaluation of systems of character analysis as practiced at present might prove of real value to industry.

Mr. Outhwaite reported that the Federation had been working in a small way on evaluation of systems of character analysis and had felt that the most advantageous procedure was to encourage studies of the specific components of such systems. Paterson's study of Blond and Brunette Traits[5] and Kitson's study of Height, Weight and Salesmanship[6] were examples.

The following report of the Committee on Plans and Purposes for the Year 1923–1924 was read and discussed.

REPORT OF THE COMMITTEE ON PLANS AND PURPOSES FOR YEAR 1923–1924

In accordance with the reports of the Officers of the Federation for the period elapsed between the date of organization, March 15, 1921, and the present meeting, the Board of Governors deemed it advisable at its meeting on the evening of Friday, May 25, to create a Committee on Plans and Purposes for the ensuing year.

[5] The Journal of Personnel Research, Volume I, No. 3, pp. 122–127.

[6] The Journal of Personnel Research, Volume I, Nos. 6–7, pp. 289–294.

The Committee has met and considered methods for extending interest in Personnel Research Federation and for altering some of its constitutional provisions to permit an operation better adapted to the existing state of personnel research. The essential features of these conditions are:

1. The fact that local coöperative organizations for research have not developed as rapidly as was anticipated at the time that the constitution of the Federation was adopted.

2. Consequently the need for and the support for a purely informational and coördinating agency in the field of personnel research has not been conspicuous. Such demand as there has been may be met by the JOURNAL OF PERSONNEL RESEARCH and the Personnel Research Series.

3. The fact that there is an increasing evidence of the value of an organization which should serve primarily, if not exclusively, as a professional organization of competent, trained and qualified persons, at least a portion of whose professional activity is devoted to the scientific study of personnel problems.

4. That there is likewise need of an organization that may take a more active part in assisting already existing groups in the pursuit of their research.

In accordance with these general and expressed needs, the Committee on Plans and Purposes suggests the following modifications in the constitution:

1. Articles I, V, (sections 2 and 3), VI, VII, VIII, and IX,—unchanged.

2. Article II. Object

a. substitution of word "furtherance" for the word "correlation."

b. addition of a section to be labelled "d" under the general paragraph beginning "Personnel Research Federation will," to read

"d. undertake to aid the organization and the conduct of selected researches."

3. Article III. Membership: simplification of classes.

4. Article IV. Dues: Revision to correspond with classes of membership as simplified.

5. Article V, Section 1: substitution of phrase "organization members" for phrase "voting member organizations."

Upon the adoption of the above changes, the Constitution will read as follows:

PERSONNEL RESEARCH FEDERATION

CONSTITUTION

Article I. Name

The name of this organization shall be Personnel Research Federation.

Article II. Object

The object of Personnel Research Federation shall be the furtherance of research activities, pertaining to personnel in industry, commerce, education, and government, wherever such researches are conducted in the spirit and with the methods of science.

To this end, Personnel Research Federation will

a. create a clearing house for information pertaining to research agencies in the field of personnel, the scope and facilities of such agencies, and researches already completed or in progress;

b. study whether and to what extent research effort may be harmonized, duplication minimized, neglected phases of the problem considered, and advanced work undertaken;

c. formulate a comprehensive general

plan through which research activities may be correlated and in accordance with which future work may develop;

d. undertake to aid the organization and the conduct of selected researches.

Article III. Membership

Section 1. Personnel Research Federation shall be composed of three classes of members:

1. Organization members
   a. Government agencies
   b. Educational institutions
   c. Associations
   d. Corporations
2. Individual members
3. Sustaining members

Organization members shall be scientific, engineering, labor, management, employer, educational and other organizations engaged in personnel research which subscribe to the policies of the Federation.

Individual members shall be persons engaged or interested in personnel research, who subscribe to the policies of the Federation.

Sustaining members shall be organizations and individuals who may or may not be engaged in personnel research but who contribute to the financial support of the Federation.

Section 2. All members shall have the privilege of attending the general meetings of the Federation, in person in the case of individuals and by duly designated representatives in the case of organizations. All members shall be entitled to receive the official publication of the Federation, The Journal of Personnel Research.

Organization and individual members are expected to

1. conduct and encourage research in their several fields in so far as may be practicable;

2. supply to the Federation for circulation among its membership reports of such research as may be conducted by them;

3. coöperate helpfully with other members of the Federation in giving information and counsel with respect to researches which may be in progress or proposed.

Article IV. Dues

The yearly dues of the several classes of members shall be as follows:

1. Organization members	$50.00
a. Governmental agencies, no dues for those agencies prevented by legal restriction from paying such dues	
2. Individual members	8.00
3. Sustaining members	250.00

Article V. Management

Section 1. The Federation shall be governed by a Board of Governors comprising one representative designated by each organization member.

Section 2. The Board of Governors shall be vested with the exercise of all powers of the Federation, subject to this constitution. It shall make provision in by-laws for the general administration of the affairs and property of the Federation.

Section 3. The Board of Governors shall determine from time to time in a general way what work is to be undertaken on behalf of the Federation and shall set the limits for expenditures.

Article VI. Officers

Section 1. The officers of the Federation shall be a Chairman, a Vice-Chairman, a Secretary, and a Treasurer, who shall be chosen annually by the Board of Governors and who shall perform the usual duties of these officers, and such other duties as may be assigned by the Board of Governors. These officers shall also be officers of the Board of Governors and may or may not be members thereof. If not members of the Board, officers shall have no vote.

Section 2. The Board of Governors shall designate an Executive Committee consisting of the Chairman and the Secretary ex-officio, and three additional members. The Executive Committee shall have all powers of the Board of Governors between meetings of the Board, provided all actions of the Committee are subject to telegraphic or letter referendum by the Board of Governors.

Article VII. Administrative Staff

Section 1. The Administrative Staff of the Federation shall consist of a Director and the necessary assistants. The Director shall be appointed by the Board of Governors, and his assistants shall be engaged by the Director.

Section 2. The Director shall be ex-officio a member of the Board of Governors and of the Executive Committee, without vote.

Article VIII. Council of Technical Advisers

A Council of Technical Advisers is authorized, to consist of expert and professional persons competent in various fields, invited by the Board of Governors to give information and counsel on questions referred by the administrative officers. Technical advisers shall serve without fee. Their number and term of office shall be fixed by the Board.

Article IX. Amendments

This Constitution may be amended by a two-thirds vote of members attending a regular meeting of the Board of Governors, provided the amendment has been submitted to all voting members at least one month in advance of the meeting.

BY-LAWS

Admission, Suspension and Expulsion of Members

1. An organization or individual engaged or interested in personnel research may apply for any appropriate class of membership, using a form to be supplied by the Federation. Applications shall be considered by the Board of Governors in such ways as it may determine and shall be submitted to letter ballot of the members of the Board within three months from dates of receipt. The Board shall determine the class of membership of each applicant. Admission to organization membership shall be void if, within three months after election, National Research Council or Engineering Foundation or any organization member file with the Board of Governors written objections, with the reasons therefore, convincing to the Board. Otherwise the affirmative vote of the majority of the members of the Board shall admit an applicant to any class of membership.

2. Each applicant admitted to membership shall be duly notified, and shall subscribe to the constitution and policies of the Federation in forms provided by the Board of Governors. If conditions for admittance are not fulfilled within six months, election shall be void. Membership shall date from day of election.

3. Any member may be suspended or expelled by the Board of Governors, after written notice and due opportunity to reply, for delinquency of more than one year in payment of dues, or for actions seriously prejudicial to the welfare of the Federation, if not less than two-thirds of the members of the Board vote affirmatively.

Payment of Dues

4. Dues shall be payable anually in advance on October first, to the Treasurer. Applicants for membership shall pay their first dues upon notification of election; but applicants admitted after six months of the fiscal year shall have expired shall pay only one-half of the annual dues for that year.

Board of Governors

5. The term of office of each representative of an organization member shall be two years. Approximately one-half the organization members shall designate their representatives upon the Board of Governors on the even numbered years and the other half on the odd-numbered years. At the beginning, those organization members designating on the even-numbered years, to be determined by lot, shall designate their members for one year only. Re-designation to the Board of Governors shall be at the discretion of each member organization. Any organization member may recall its representative at any time.

6. The Board of Governors shall meet annually in October, and at other times at the call of the Chairman or upon the request of five members of the Board.

7. A quorum of the Board of Governors shall be one-third of its membership.

8. Meetings of the Executive Committee shall be called by the Chairman, upon the request of three members of the committee.

Election, Removal and Bonding of Officers

9. Officers of the Federation and members of the Executive Committee shall be elected by letter ballot, and the affirmative vote of a majority of the Board of Governors shall be necessary in order to elect. A vacancy in any office shall be filled by the Board of Governors in the same manner. A committee of not less than three members may be appointed by the Chairman not less than four weeks before the date of the annual meeting, to nominate officers and members of the Executive Committee for the following year; but voting shall not be restricted to the nominees of this committee.

10. Any officer of the Federation may be removed at any time by the affirmative vote of a majority of the Board of Governors.

11. The Board of Governors may require the Director or any officer, in its discretion, to give the Federation a bond in such amount as the Board may require, at the expense of the Federation, with sureties satisfactory to the Board, for the faithful performance of the duties of his office and for turning over to the Board all books, papers, vouchers, records, money and other property of whatever kind belonging to the Federation that have been in his custody.

Committees

12. Committees for the study of any subject within the province of the Personnel Research Federation shall be authorized by Board of Governors. The members of a committee may be selected by the Director, with the advice and consent of the Chairman of the Federation. Membership in these committees is not limited to members of the Federation.

Director

13. The Director shall devote such portion of his time to the work of the Federation as may be covered by the terms of his engagement. He shall serve as the executive officer of the Federation and conduct the ordinary business of its office. Under the general authority of the Board of Governors, the Director shall promote the objects of the Federation as stated in the constitution, and within authority granted may initiate and carry out operations necessary or desirable therefor.

14. The Director shall have authority, subject to the general control of the Board of Governors, to determine the ways and means which he shall use in performing the work assigned to him by the Board, provided he does not undertake expenditures in excess of the funds provided in the budget or by special appropriation.

15. The compensation of the Director shall be fixed by the Board of Governors. Within the budget allotment, the Director may fix the compensations of his assistants.

Secretary

16. The Secretary shall keep a record of all proceedings of the Federation, its Board of Governors, and the Executive Committee, and shall send a copy of the record of each meeting to each member of the Board of Governors.

17. Notices for general meetings of the Federation, and for the meetings of the Board of Governors shall be mailed by the Secretary not less than 15 days in advance of the date of the meeting. Notices for meetings of the Executive Committee shall be given by mail or wire not less than 24 hours in advance of the time of the meeting.

18. The Secretary shall notify each member of the amount of the dues for the ensuing year, at the time of giving notice of the annual meeting.

Treasurer

19. The Treasurer shall receive and safely keep all moneys paid to him for dues or otherwise for the purposes of the Federation. He shall deposit the funds in the name of the Personnel Research Federation in a bank acceptable to the Board of

Governors and shall sign all checks drawn upon said funds.

20. The Treasurer shall make payments only on vouchers approved by an officer of the Federation or by the Director, which are in accordance with the annual budget or other authorization of the Board of Governors.

21. The Treasurer shall establish a petty cash fund for the Director, in an amount to be determined by the Board of Governors, and shall replenish it from time to time upon submission by the Director of proper vouchers.

Budget

22. The Director shall submit to the Board of Governors annually, not later than August 1, a tentative budget of anticipated income and proposed expenditures for the year beginning October 1 next ensuing. Provisions shall be made separately for the administrative staff and for the necessary expenses of each officer. The budget, after amendment and adoption by the Board of Governors, shall control the financial operations of the Federation, excepting as otherwise authorized by the Board.

23. No obligations or bills shall be contracted for the Federation, nor shall contracts be made in its name, unless authorized by the Board of Governors.

Amendments

24. The Board of Governors may amend these by-laws at any meeting at which a quorum is present, by a two-thirds vote of those present, provided the amendment shall have been mailed to each member of the Board not less than three weeks before action is to be taken. Any member unable to attend the meeting may send a letter ballot.

* * *

At a meeting on May 26, following the annual meeting of the Personnel Research Federation, the Board of Governors adopted the report of the Committee on Plans and Purposes for the Year 1923–24 and approved the amendments of the constitution therein stated.

APPENDIX

LIST OF PERSONS ATTENDING ANNUAL MEETING OF PERSONNEL RESEARCH FEDERATION, MAY 26, 1923

Charlotte N. Adams, National Board of Y. W. C. A., 135 East 52nd Street, New York City.

Elsie L. Baechtold, Irving Bank-Columbia Trust Co., 233 Broadway, New York City.

Marion A. Bills, Life Insurance Research Bureau, 50 East 42nd Street, New York City.

Walter V. Bingham, Division of Coöperative Research, Carnegie Institute of Technology, Pittsburgh, Pa.

Samuel S. Board, Central Y.M.C.A. Brooklyn, 55 Hanson Place, Brooklyn, N.Y.

Elsie O. Bregman, Teachers College, New York City.

D. S. Bridgman, American Telephone and Telegraph Co., 195 Broadway, New York City.

Dean R. Brimhall, Psychological Corporation, 3939 Grand Central Terminal, New York City.

Paul F. Brissenden, Columbia University, New York City.

William S. Bullock, A. S. M. E., 29 West 39th Street, New York City.

John W. Burke, 55 Broadway, New York City.

Eliza R. Butler, Personnel Division, Y. W. C. A., 600 Lexington Avenue, New York City.

J. McK. Cattell, Psychological Corporation, 3939 Grand Central Terminal, New York City.

Robert C. Clothier, The Scott Company, 761 Drexel Building, Philadelphia, Pa.

W. J. Donald, American Management Association, 20 Vesey Street, New York City.

John H. Dunlap, A. S. C. E., 33 West 39th Street, New York City.

Theodore W. Egly, Irving Bank-Columbia Trust Co., 233 Broadway, New York City.

Milton Fairchild, Character Education Institution, 3770 McKinley Street, N. W., Chevy Chase, Washington, D. C.

Kathryn Farra, American Ass'n—Social Workers, 130 East 22nd Street, New York City.

Alfred D. Flinn, Engineering Foundation, 29 West 39th Street, New York City.

Hugh Frayne, for Mr. Morrison, American Federation of Labor, 1416 Broadway, New York City.

Frank B. Gilbreth, 68 Eagle Rock Way, Montclair, N. J.

Sarah B. Gober, Vocational Service for Juniors, 117 Waverly Place, New York City.

Frederick Hansen, Life Insurance Sales Research Bureau, 50 East 42nd Street, New York City.

Marius Hansome, 417 W. 118th Street, New York City.

Emma P. Hirth, Bureau of Vocational Information, 2 West 43rd Street, New York City.

H. L. Hoopingarner, New York University, 32 Waverly Place, New York City.

Richard W. Husband, Dartmouth College, Hanover, N. H.

James D. Jackson, Dept. of Institutions and Agencies, State Office Building, Trenton, N. J.

Helen R. Jeter, Bryn Mawr College, Bryn Mawr, Pa.

Paul O. Komora (for Dr. Williams), National Committee for Mental Hygiene, 370 Seventh Avenue, New York City.

Henry C. Link, U. S. Rubber Company, 1790 Broadway, New York City.

Earl H. Loomis, Committee on Business Information, Yale Club, New York City.

J. N. McFee, Hutzler Brothers Company, Baltimore, Maryland.

Leonard Outhwaite, Personnel Research Federation, 29 West 39th Street, New York City.

D. W. K. Peacock, White Motor Company, Cleveland, Ohio.

H. S. Person, Taylor Society, 29 West 39th Street, New York City.

L. O. Pethick, Metropolitan Life Ins. Co., 1 Madison Avenue, New York City.

Agnes L. Rogers, Goucher College, Baltimore, Maryland.

Elisabeth Sill, Irving Bank-Columbia Trust Co., Woolworth Building, New York City.

Paul Studensky, Bureau of State Research, N. J. State Chamber of Commerce, Clinton Bldg., Newark, N. J.

Fred Telford, Bureau of Public Personnel Administration, 26 Jackson Place, Washington, D. C.

R. S. Uhrbrock, Western Union Telegraph Co., 24 Walker Street, New York City.

W. H. Vickers, Consolidated Gas Electric Light & Power Co., Baltimore, Maryland.

M. H. Wagenhals (for Dr. Williams), National Committee for Mental Hygiene, 370 Seventh Avenue, New York City.

Wm. E. Wickenden, American Telephone and Telegraph Co., 195 Broadway, New York City.

J. C. Wright, Federal Board for Vocational Education, 200 New Jersey Avenue, N.W., Washington, D. C.

Lloyd N. Yepson, Department of Psychological Research, Training School at Vineland, N. J.

Robert M. Yerkes, National Research Council, Washington, D. C.

News Notes

BUREAU FOR PART-TIME WORK

Established in January, 1922, in order to obtain positions for women, who for various reasons desire to work only part time, the Bureau for Part-Time Work has recently issued a report of some of its findings during the first year of its existence.

The Bureau registered 2374 women and placed 521 in a wide variety of positions. Of these 521 placements, 271 (52 per cent) were in what are generally classed as office positions—secretarial, stenographic, clerical, typing, and book-keeping. Forty-one were placed in cafeterias, 36 took care of children, 12 acted as companions, 11 were placed in clinics, 11 were trained nurses, and 11, tutors. Fewer than half the positions filled were permanent and about as many required afternoon as morning hours.

More than half of those who registered for part-time work (55.3 per cent) were thirty years of age or over; 824 (34.7 per cent) had had a college education, and 1777 (74.8 per cent) were trained for their work.

Only 429 (18 per cent) of the women registered during the year were married women who were seeking part-time employment outside the home; 1747 (73.5 per cent) were single women, the remainder being widowed divorced or separated from their husbands.

Students, needing money to pay for their education, formed a large group of the registrants, 730 (30.7 per cent); 610 (25.6 per cent) already had part-time work of some kind; 552 (23.2 per cent) had household duties which kept them at home a part of each day; only 245 (10.3 per cent) gave the reason that they wanted more leisure than a full time position generally permits; 193 (8.1 per cent) gave health as the reason for wanting only part-time work, and the small remainder, 44, were in search of special kinds of work.

The record of the earnings of the 521 women placed is far from encouraging. By far the largest single group, 149 (28.6 per cent) was made up of those who worked by the day only, earning from $2.00 to $7.00, and the next largest group, 99 (19 per cent) worked by the hour at rates of from $.35 to $3.00. Of those who worked by the week, only 11 received $25 or more, while the majority earned from $10 to $15 a week.

Commenting on the report, the May first News-Bulletin of the Bureau of Vocational Information says:

"The Bureau for Part-Time Work has the responsibility and opportunity for significant educational work among employers and for studying industry and the professions from a new point of view. The needs of the 1853 not placed were as great, no doubt, as those of the successful 521, and it is safe to assume that the demand on the part of women for part-time paid employment will increase rather than decrease. A careful investigation of the duties of many positions, similar to that now being made of stenographic and secretarial positions by the Division of Educational Reference and Research of the Carnegie Institute of Technology, would probably reveal possible combinations and adjustments which would work to the advantage of part-time workers. The Bureau for Part-Time Work has a big task before it."

FEDERAL EMPLOYMENT STABILIZATION

Announcement was made by Otto F. Mallery in the March number of the American Labor Legislation Review that a new bill is being prepared for introduction in the next Congress for federal employment stabilization. Its purposes are continuity of employment and the equalization of employment throughout the cycles that the federal government may minimize its competition with private industries during

periods of business activity and increase it during periods of depression, in order to prevent unnecessary dislocation of wages and prices due to such competition, and that the government may avail itself of lower costs existing during periods of unemployment.

CONTINUOUS EMPLOYMENT POLICY

In an address before the American Management Association, at that time the National Personnel Association, Howard Coonlay, President of the Walworth Manufacturing Company, New York City, told how his Company worked out a continuous employment policy despite seasonal fluctuations. Studies a year in advance of future possibilities served as a basis for production program. They found their seasonal sales coincided accurately with the business cycles charted by two services. Estimation based on this research that sales would run 43 per cent above 1921 figures were found to vary but 1 per cent from this. Production was more economical, men better satisfied with constant employment and efficiency all around was improved.

PSYCHOLOGY FOR DETECTIVES

According to the Mental Hygiene Bulletin for March, elementary psychology will be one of the subjects in the curriculum of the training school for detectives recently established by the New York police department. The details of the course have not been fully worked out, but it will include a study of mental impulses and emotions, motives and mental antagonisms, emotional stress and its influence upon crime, motive as a cause of crime, useful methods to improve the memory and perception of the detective, involved mental processes following certain stimulation of the emotions and instincts. There will be a course in elementary criminology with studies of mentally defective, insane, and borderline cases of criminals. Lectures on the psychopathology of crime by Dr. Sylvester R. Leahy and Dr. Menas Gregory have been announced. Candidates for the school will receive physical and mental tests.

SCIENTIFIC STUDY OF "COMFORT LINES"

Scientific research conducted by the American Society of Heating and Ventilating Engineers, in coöperation with the United States Bureau of Mines and Carnegie Institute of Technology, at Pittsburgh, shows that fat men endure high temperature and humidity better than thin men. In experiments to determine the relative effect of various temperatures and humidities on the human body, the scientists also found that sweat is the chief factor causing sore eyes, when a person becomes heated.

Another common belief was blasted during the experiments when they found that the drinking of ice water failed to develop cramps in the men after they had been subjected to an hour's exposure to high temperature.

The object of the research work in Pittsburgh is to establish, by scientific study, the exact degree of temperature, and of humidity, or "comfort lines" a person should be subjected to in a room. The problem was first attacked several years ago, and the research work has now reached a point where definite results have been obtained by the Society, which has had the coöperation, also, of the United States Public Health Service. The first experiments have been to study the physiological effects of various temperatures and humidities on human subjects at rest in still air, and for these, a staff of physicians and employes of the Society have subjected themselves to great hardships.

One of the important results of the experiments was the discovery of the great variations of external temperature which the human being can endure, and at the same time, retain his physiological efficiency. Another fact discovered was that increasing pulse-rate is more the cause of discomfort than is body temperature, when in a heated room.

A report of the experiments, recently issued, makes the following assertions: While irrelevant to the present study, an attempt was made to determine the cause of the inflammation of the eyes, and also to find out whether or not the drinking of

ice water produces cramps, as so frequently complained of by workers in the industries.

"On a day when the eyes were normal, a small quantity of sweat which had been collected during an experiment, was dropped in the eye. The conjunctiva almost immediately became inflamed and the eye felt sore. The sweat collected from the face seemed less irritable to the eye than that collected either from the chest or arms. Sweatbands were then applied to the forehead during the experiments, these preventing the sweat from falling into the eyes, and also preventing the inflammation. This proves sufficiently that the sweat is the chief factor in producing the conjunctivitis which accompanies exposure to heat.

"It has frequently been stated that workers exposed to high temperatures developed severe cramps after drinking ice water. A few of the subjects of the experiments volunteered to drink ice water after about an hour's exposure to high temperature, and two of them, in one experiment, drank a quart of ice water in less than fifteen minutes without ill effects. Cramps did not develop in any of the subjects at any time."

On entering and leaving the specially heated chamber the report shows loss of weight varied with the individual, the heavier and stouter man losing more than the light thin one. Notwithstanding this, the lighter man as a rule could not endure the temperature conditions as long, and complained more of the exhaustion which followed.

INTELLIGENCE TESTS

In a recent issue of School and Society, Mr. W. G. Bagley has outlined some remarks made before the Psychology Club of Teacher's College, Columbia University.

1. The value of mental tests as aids in grading school pupils, diagnosing individual disabilities and selecting individuals for temporary employments requiring ability to learn new duties quickly (as in the Army tests) is unquestioned.

2. The use of mental tests on a wide scale to group individuals during childhood and youth in a way that will "load the dice" as to future occupation, opportunity, mode of life or social status is to be condemned:

a. Because of the present uncertainty regarding the accuracy of the tests as measures of innate mentality.

b. Because of the prevailing uncertainty (not to say profound ignorance) concerning the part played by innate mentality as compared with other presumably innate factors in determining achievement.

c. Because of the clear dependence of democratic institutions upon a widespread community of ideas, ideals, standards, aspirations and sympathies, which can conceivably be provided, if at all, only by a common culture, which, in turn, would be prevented by any considerable amount of differentiation or segregation in elementary education.

3. The application of the mental-test theory to education is fraught with especial peril because the results of the tests are expressed in relative terms (whether of "mental age" or of "intelligence quotients"). Democratic education is fundamentally interested not in the possibility that this individual may surpass that individual, but rather in the absolute advancement of both and of all. The whole tendency of the theory of testing, of its technique and of its formulation of results, has been to obscure absolute gains.

4. Assuming that intelligence means (among other things) ability to grasp abstract conceptions, education is interested both in the growth of the ability and in the number and quality of the abstract conceptions that are grasped.

In comprehending an abstract conception (for example, the notion of "ratio," the idea of "gravity," the conception of "representative government") different minds work with varying degrees of rapidity, due to the readiness or the slowness with which they pass from the particular to the general. Let A represent the starting-point in such a process and Z the terminus. Different individuals may require steps or gradations pictured as follows:

Genius:	A.....Z
High IQ:	A.....M.....Z
Medium IQ:	A.....D.....H.....M.....Q.....T.....X...Z
Dull:	A B C D E F G H I J K L M N O P Q R S T U V W X Y Z
Stupid;	A B C.....(further progress impossible)

Democratic education is interested in the rapidity of the process; it is far more fundamentally interested in getting as many persons as possible to as many common Z's as possible.

5. It is fairly clear that the ability just referred to grows from infancy to (physiological) maturity. Some of this growth is unquestionably due to the gradual maturation of the anatomical structures and physiological functions underlying mentality. It is also presumable from the evidence already on record that some of the growth is due to systematic education. Current discussions in the field of mental testing, both "popular" and "professional," have over-emphasized the former type of growth and have almost entirely neglected the latter. It is a fair "guess" (not entirely unsupported by evidence) that somewhat more than one-half of the "intelligence" of the average sixteen-year-old school child has been contributed by his schooling.

6. How far "intelligence" may grow after the growth due to natural forces has ceased —whether, indeed, it grows at all after maturity—are questions for which there is not as yet even the semblance of an answer. It can hardly be denied, however, that something grows with the continued stimulus of systematic education (or of experience in fields that constantly exercise the abilities in question). If it be objected that this something is not "intelligence," the answer is that it then represents something rather more important than intelligence.

7. The tendency of the mental-testing movement has been to ascribe to native intelligence an importance that is beyond its just deserts.

a. Individual differences in native intelligence are far less significant socially than are the resemblances in ideas, ideals, standards and attitudes that education may bring about.

b. While the native intelligence of men of great achievement has undoubtedly been well above the average in the great majority of cases, there is much evidence that other presumably native qualities as well as favorable environmental (including educational) influences have played a most important part in insuring social gains.

c. If native intelligence were so all-important as present-day psychology apparently teaches, we should expect a discontinuity of culture in place of the clear continuity of culture that is revealed, not only by history, but also by what has been learned of prehistoric man. It has clearly been the consolidation of environmental gains that has lifted mankind from the paleolithic levels.

d. If native intelligence were so all-important, we should expect to find the great turning-points of human progress correlated with positive variations or increases in native intelligence extended generally through large social groups. This is biologically improbable, and as a matter of fact the turning points in social evolution have actually been correlated with improved methods of communication—improved means of letting more light into common minds!

8. Whatever the attitude of the individual psychologist may be toward the significance of native intelligence, the psychologists as a group owe it to the public (in view of the wide interest that has been aroused in the tests and the peril that lies in current misinterpretations):

a. To set forth clearly the fundamental assumption that underlies any effort to infer differences in native mentality from the results of any mental test—the assumption, namely, that, in respect of the individuals compared, educational and other environmental stimuli have had a chance to operate equally.

b. To deny publicly and as a group the assumption that the results of the Army

tests constitute a just appraisal of the native intelligence of the American people.

c. To make clear to the public the purely relative significance in which the terms "mental age" and "intelligence quotient" are used.

d. To discourage the use of phraseology of the following type: "So-and-so (an adult) has the mind of a ten-year-old child."

CHILD LABOR AND THE WORK OF MOTHERS IN THE BEET-SUGAR INDUSTRY

The complete report on "Child Labor and the Work of Mothers in the Beet Fields of Colorado and Michigan," concerning which preliminary statements have been issued, has just been made public by the United States Department of Labor through the Children's Bureau. The sections with which the report is concerned were chosen as representing two of the three principal beet-growing areas in the United States, the western mountain and the middle western area. In two Colorado counties 1073 children under sixteen years of age and 454 mothers, and in parts of three Michigan counties 763 children and 397 mothers doing beet-field work were included in the study. In each section four-fifths of the working children were less than fourteen years of age and one-fourth were less than ten. A large proportion of the six and seven year old children in the families interviewed and three-fifths of the eight year-olds had done beet-field work. A mother quoted as describing a common custom said that her child had worked "ever since he could lift a beet."

The work is described as unsuitable for children because of its monotonous, uneducative character, its interference with schooling, and the long hours involved in the rush work at certain seasons. During the thinning process which must be completed before the plants grow too large, 85 per cent of the Colorado children included in this study and 67 per cent of those in Michigan worked from nine to fourteen hours a day. Two-thirds of the children in each section who engaged in hoeing had a working day of nine hours, or longer, and harvest time, in order to get in the crop before it was caught by a heavy frost or otherwise spoiled, three-fourths of those for whom hours were obtained worked from nine to thirteen hours daily.

Large numbers of laborers resident near the farms can be secured for beet work in Colorado, but both there and in Michigan the number is supplemented by migratory families recruited by agents of the sugar companies in various industrial and mining districts and on the Mexican border. In both sections the great majority of the parents in the families interviewed were foreign born.

On the farms where they worked, beet laborers' families occupied any kind of shelter that was available for temporary use, such as abandoned farm houses, rough frame or tar-paper shacks, small portable cottages provided by the companies, and tents or caravan wagons. Overcrowding was extreme, yet most of the laborers lived in their "beet shacks" five or six months in the year.

In both areas difficulty was reported in enforcing the school attendance law. Many teachers stated that when the children returned to school at the close of the beet harvest, which might be as late as the end of November, they were too tired and listless to adjust themselves to the school routine. Supplementary surveys covering several thousand school children resident in the beet sections showed that the attendance of the beet-working children was from 20 to 30 per cent less than that of the non-working children, and that a much larger proportion of the former were behind their normal grades. The children of the migratory laborers lost even more time from school than the resident children, and were correspondingly retarded.

Mothers working in the beet fields did so for long, regular hours, not merely at times when their household duties permitted; beet work took precedence over all other tasks. Meals were prepared and other housework performed at the expense of the mothers' sleep and rest. Many had small children but were able to give them very little care. Babies were usually taken to the fields, where they were entirely without shade, or in some cases sheltered by

a tree or tent. Children three, four and five years of age either played about the fields or were left at home, in many cases with no caretakers except other young children.

For the largest group of laborers' families in each area the season's earnings were from $800 to $1000, while about half the Colorado families and less than one-third of those in Michigan earned $1000 or more. The value of a child's work, if he engaged in all the processes, averaged about $200 in Colorado and among the Michigan children, who were less experienced, from $114 to $122. It is estimated that the former, on an average, cared for 5.9 acres per child.

The report concludes that if adequate school attendance laws were effectively enforced, at least one serious objection to beet-field work for children would be met. Satisfactory enforcement is said to require suitable administrative machinery, such as a sufficient number of full-time attendance officers, and enforcement under State supervision. It requires also coöperation on the part of the parents, and if the fullest coöperation is to be expected of the foreign-born beet-field laborer in rearing and educating his children he must himself be given opportunities to learn the language and be put in touch with the general community life. So long, also, as the theory of payment for the beet-field work is in effect that of a family wage it is not be to expected that the children will be kept in school regularly or the mother withdrawn from the field to care for her children and the home.

There is declared to be especially urgent need of provision for the education and welfare of migratory workers' children if they are to escape undue hardship. So far as it is found necessary or convenient to import families of laborers for seasonal work, it would be assumed usually, the report says, that "it is the obligation of the community to which they go to provide school facilities for the children. If the community can not undertake it, the responsibility clearly devolves upon the State." California has made such provision, according to the report, and Nebraska has included beet-field work by name in its child labor law, among the occupations for which hours are limited.

Book Reviews

MANAGEMENT—A STUDY OF INDUSTRIAL ORGANIZATION

By John Lee, M.A., M.Com.Sc. pp. 1 + 125, 1921.
London, Sir Isaac Pitman & Son, Ltd.

REVIEWED BY DAVID R. CRAIG

Business has always been recognized as a branch of the subject of economics, by business men as well as by economists. Management has been regarded as one of the phases of business, and so it has been handled in writings largely by economists. It has been well handled, and a considerable body of knowledge of the different devices of management has been accumulated. Planning, routing, time study, motion study, functional organization, standard methods—these are a few of the outstanding economic contributions to the science of management.

Yet, in the actual work of managing, other abilities than these are required. If every manager and executive were cooped up in a separate and opaque booth, receiving information and giving orders only in written communications, he would need to know nothing but the physical means by which his organization is kept alive. But nobody manages in this way. More than nine-tenths of managing is accomplished orally. No manager becomes a successful manager unless he can "get along" with the human beings that are around him.

The writings on the subject of management are more and more adopting this attitude. Mr. Lee's book, a series of lectures before London audiences of business men, gives at once a summary and a starting point for fresh and lively speculation.

"It is curious," says Mr. Lee, "that in America the more distant phases of management, as we may call them, the formulation of policy, the working out of th broad principle of production and sale are taken for granted. No one needs training or scientific method, apparently, to be at the head of half a dozen Trusts or to manage the financial interests of various huge corporations."

Mr. Lee begins by raising an even deeper question than this. He starts with the ultimate control of industry. But he is writing a book on management, not on guild socialism or syndicalism. He does not defend any single program for industrial reform, but shows that with every one of them there will always be the need for a high order of managerial ability. Otherwise the thing will simply not move.

In order to make a high managerial ability possible, it will be necessary, he says, to catch the future administrator young and train him from his early years. "The new science of management, a synthesis of sciences, should be frankly recognized." "The universities and other educational institutions should set themselves to provide tuition and tests in all that bears on the science, from psychology to accountancy." And so, although mature men may be offered the opportunity for training, it will be desirable to train the manager in his most educable period.

What is this management which requires a training commensurate with that of a surgeon? Essentially the author's concept is a psychological one, and he leans heavily on Dr. McDougall's "The Group Mind."

Organization, he says, is for the purpose of raising the moral tone of the group-mind. In a mob the group-mind is characterized by a lower tone than that of any of its individual member-minds; in the organization, the moral tone of the group mind is higher than that of the member-minds separately. The central aim of management, Mr. Lee repeats again and again, is to develop the corporate spirit. "We can put our work of management to a severe test when we ask if it is producing an organism—an actual and living organism—in which each living unit is compelled, and is glad to be compelled, to offer his best and which, as a collective expression of ideals or of opinions, holds a standard definitely higher than that held by any of the contributory individuals."

The theme which Mr. Lee presents may be best set forth by a few direct quotations.

"It seems clear that the group-mind will take the place of the old discipline. The manager will realize that his word carries more weight when it is accompanied by the general corporate assent of those whom he leads."

"The staff manager [*sc. personnel manager* in American terminology], whose responsibility is to direct the human side of operations, to consider the human point of view in correlation with the other points of view, will become not merely a true expert in respect of that point of view but will become practically a staff representative. . . . . In short he will succeed by the fostering of the 'group' minds. His methods of discipline will be aided by the general moral assent of the body of workers. He will be a disciplinarian in the truest sense of the word in that his function is to make disciples and and in turn to train himself to be worthy of that discipleship."

"The managing director who asked his manager if there was any particular unrest in the staff was rather surprised when the manager said he did not know. If he had carried out his surprise into action he would have realized that he needed a manager who would be sensitive to unrest, who would know of it by direct psychological evidence, who would himself be unhappy in the atmosphere of it."

"Management, worthy the name, will be unsatisfied until it is so sensitive that the hard articulation of the threat of conflict will not be needed. It may not mean universal industrial peace, but it will mean a sober attempt to understand, not merely in the sense that each will present a crystallized 'case' for an intermediate to judge, but the deeper and fuller understanding which will come from the day-by-day association in an industrial organization alive and quick to hear and to feel each impulse which stirs in every part."

This is the thesis which the author develops through successive chapters on Industrial Control, Functional Management, Coördinate Managements, Directive Management, an especially interesting one on Immediate Supervision, Training and Scientific Management, Promotion and Discipline, Theories of Wages, Welfare Methods, Works Committees and Whitley Councils, and the Evolution of Management. To a certain unavoidable extent the chapters overlap and repeat each other, because the material was given originally in the form of lectures.

The treatment is logical rather than historical. The author shows what advantages accrue to the enlightened manager from treating his subordinates with reasonableness and justice. A foreman said the same thing to the reviewer the other day, but in historical rather than logical terms: "You can't put the fear of Jesus in 'em any more: there ain't enough of 'em." And this explains partly why so excellent a book comes out of England before an American approaches the subject from the point of view of a popular treatise on management. In England, there haven't been "enough of 'em" for a much longer time than here. Later, with us, the necessities of a shortage of labor over a period of years will make a similar treatise extremely probable. It would be the part of the wise manager to learn his lesson before he is forced to use it.

SUCCESS INEVITABLE OR THE PSYCHOLOGY OF SUCCESS

By Joseph White Norwood, B.S. R. F. Fenno and Co., New York. 1923. 275 pp.

REVIEWED BY HAROLD E. BURTT

This book contains an interesting mixture of some sound psychological principles, some fantastical theories and some of the usual "inspirational" discussion that one would suspect from the title. One gathers from the tone of the book that the author is not attempting to promote his personal ends or to "sell" something but has worked out what he considers a good thing and is attempting to pass it along. He expresses himself as willing to turn over profits from sales of the book to the furtherance of similar works. However, the scientific reader will feel less confident than the author as to the infallibility of the system. He claims that he has "an exact formula for success in business" and that "the Natural Law of Success works as unceasingly and is as inevitable in its results as the Law of Gravity."

The book comprises twelve chapters or "lessons" in somewhat climatic order. The first is *Attention* and after stressing its importance in business and its basic rôle in in subsequent mental procesess, various practical suggestions are made. For instance, "divide your time and not your attention;" "keep office hours on your ambitions," i.e., give them some attention but at specified times rather than day dreaming; avoid worry by concentrating on the present task,—if necessary have a "worrying hour" occasionally and devote full attention to it till the absurdity is manifest. The discussion of *Attitude* contains a questionnaire designed to bring out one's attitude toward his work and comments upon typical replies to the questions. *Energy* and power may be acquired by use. *Silence* "stops up the leaks in personal energy." *Emotion* may be controlled by transforming it. *Memory* is considerably dependent on attention and imagination. The author has little use for the classification systems of the memory "experts" and recommends the use of notes and files. The final chapters on *Initiative, Purpose, Ambition, Achievement* and *Mastery* contain little in the way of scientific fact or practical suggestion except in so far as there is a certain tone of idealism running through them and an emphasis on service.

The style is non-technical and there is a manifest effort to use analogy to clarify psychological matters. For instance, attention is like the field of a microscope, or again like the engineer in control of a power station; one's attitude may become "polarized" so that all thought and energy turns in one direction; emotion is a spark-plug; one's energy flows through a pipe of silence which should not leak; and business goes on periodical "drunks" of profiteering. Some of the analogies seem slightly far fetched.

Each lesson is followed by an "exercise." That for attention involves noting carefully every detail concerned with some routine process such as dressing. That for memory involves recalling these details subsequently. The other exercises consist mainly of contemplating one's future with emphasis on some aspect of it.

The author is not particularly sound on fundamental principals. His science is manifestly teleological and he believes in panpsychism,—even the electrons are conscious. A few of his more startling statements will be mentioned. "There are mental rays which are focused by Will and these rays proceed from the central sun of memory." "The perceptive center is in the middle of your head in the part of the brain containing the pineal gland and the pituitary body." "Escaping energy . . . surounds us with a personal atmosphere . . . . . which other people with whom we come into contact actually feel or sense." There is a "universal energy" which flows vertically toward the earth of which we are unaware "until we interpose our will in its path and . . . . then it invigorates us." It may be demonstrated by standing with arms outstretched and one palm upward and the other downward. The former will begin to tingle slightly before the latter does, and if the observer wishes strongly enough he will

feel "a warmth first in your upturned palm, then filling your whole body by spreading out from your solar plexus and then flowing out the down turned palm." Aside from a few instances like the above, the author does not fly directly in the face of science.

In the reviewer's opinion the book compares favorably with others of its kind. It will probably not be injurious to the majority of readers—neither will it be very beneficial. Those who derive some slight benefit from books of an inspirational character will find the usual platitudes in the later chapters. Moreover, there are some fairly commonplace statements regarding memory and attention which are fundamentally sound and practicable and will have some value for those not already familiar with them.

SOME PROBLEMS IN CURRENT ECONOMICS

By M. C. Rorty. A. W. Shaw Co., Chicago. 1922

REVIEWED BY MALCOLM KEIR

The lamented economist Simon N. Patten used to say that no book contained more than a few pages of original material; the rest was padding. This volume of Mr. Rorty's, limited to five short chapters, aggregating 137 pages, makes its real contribution in the last two chapters, and even in these the statistical facts cited have been published before. The value of the book lies in demonstrating the usefulness of accurate statistics in dealing with industrial and political problems.

These two chapters pick out the most illuminating statistics gathered by the National Bureau of Economics Research Inc. and published by it in the book "Income in the United States." After setting the facts forth in Chapter IV they are interpreted in the following and final chapter. The special explanations made by Mr. Rorty are confined to the issues that lie within the domain of industry and government. The author indicates that in the past in these fields fancied grievances have been offset by hypothetical cures. He argues that in the future we should establish the grievances as ascertained truths and proceed to their amelioration by the guidance of statistical research.

Without statistical accuracy hypothetical cures may include a revolutionary overthrow of the existing economic order but when statistical research aids programs of reform revolution becomes unreasonable because the data prove that the present evils are not due to the economic order itself but to the contradictory working of of some of its parts. The machine should be improved but not scrapped.

The first three chapters in the book would be classified by an economist as padding but may contain valuable information to persons untrained in economics. The chapters deal with industrial history, social and industrial organization and a brief excursion into one economic theory of production and distribution.

Mr. Rorty is an engineer by training, and a responsible official in the American Telephone and Telegraph Company. To this admirable industrial experience Mr. Rorty has added to his mental equipment by the work and associations connected with his presidency of the National Bureau of Economic Research, Inc. His book plainly shows his personal background.

But in order to avoid bias the author submitted his manuscript to men who disagreed with him fundamentally and the criticisms offered by these men are included as footnotes to the text. One suspects that most of the comment thus incorporated in the book originated with Harry W. Laidler, the "well informed and temperate, minded socialist."

The book is small and may be read easily within two hours. But such a hasty perusal would be unfair to the author and of little profit to the reader. The pages, although, few in number, contain much that needs careful thinking over after reading. This fact, together with heaviness of style, prohibits the book from usefulness among undergraduates, but recommends it to mature men both in the domain of business and the academic retreats.

LABOR AND DEMOCRACY

By William L. Huggins. The Macmillan Company, New York 1922. pp. 213 + xii

THE KANSAS COURT OF INDUSTRIAL RELATIONS

By John Hugh Bowers. A. C. McClurg and Company, Chicago, 1922. Chs. vii, pp. 133

Reviewed by H. G. Kenagy

The Kansas Court of Industrial Relations, established in 1920, has been the most talked of experiment in social legislation which this country has seen since the days when compulsory arbitration arrived from New Zealand. The country has watched the results achieved in Kansas with a lively interest, because for the first time the "public interest," as affected by industrial conflicts, was being recognized.

It is only natural that, after two years of the court's operation, both its friends and its foes should publish estimates of its success. These two little books are frank proponents of the court and praise the work which it has done. Unfortunately neither book has been impartial and critical, and the reader quickly gets the atmosphere of prejudice and partisanship. Mr. Huggins, as presiding judge of the court, naturally attempts to extol and defend the court's record. Dr. Bowers, Professor of Social Sciences in the Pittsburgh, Kansas, State Normal School, might have been expected to take a coldly critical and unimpassioned attitude, but he almost descends to the emotional in his zeal to glorify the Court's achievements. This combined with the style and looseness of expression of a college sophomore, makes his little essay largely futile and unconvincing.

Stripped of mere opinions, old platitudes and meaningless moralities, both volumes contain a residue of information about the working of the Court of Industrial Relations, and are valuable for this reason. However, the cases chosen for exposition and comment all contribute to the authors' defense of the court, leaving the impression that the Court has made no mistakes. All criticisms of the court are dismissed by branding them "ill founded," "thoughtless," or inspired by radicalism. Mr. Bowers declares (p. 100) that almost none oppose the court except the personal adherents of Alexander Howat, the Miners' King who led the attack against it.

Evidently public opinion has changed considerably in Kansas since Mr. Bowers and Mr. Huggins wrote, for the new governor was elected on an anti-court platform. The court has been made a political issue, despite the fact that the judges are not elected by popular vote. This, in itself, may be taken as a serious argument that laws and courts—so strongly championed by Judge Huggins—are unsafe instruments of industrial justice until the education of the public on industrial problems reaches a higher plane.

Abstracts

Psychology Applied. PROFESSOR W. V. BINGHAM. The Scientific Monthly, February, 1923, Vol. XVI, No. 2, pp. 141–159.

A story of an adventure in higher education—the formal establishment of a department of applied psychology in Carnegie Institute of Technology.

The Division of Applied Psychology at Carnegie Institute of Technology was founded in 1915 in an institution distinctively appropriate for the work, for here were found Colleges in which were applied all the arts and sciences, the College of Engineering, at first called the School of Applied Sciences, the Margaret Morrison Carnegie School for Women, the College of Fine Arts, formerly the School of Applied Design, and the College of Industries, at first called the School of Applied Industries.

Many uses for psychological technique were indicated in the work of educating 3200 students. Some of the more obvious uses were first, instruction in psychology to enable the student to better understand and control human behavior, second, the discovery of aptitudes of students, and third, the supplying of data to deans and class-officers, regarding traits and differences in ability. The fact was recognized at the time that to develop these applications would require long and patient research, even considering the decision already made, that no activity of other agencies would be duplicated. When Doctor Bingham accepted President Hammerschlag's invitation to assume direction of the proposed central department it was not clear that service to business and industry would be an outstanding feature of the work.

When the newly established Division began its activities in September, 1915, Doctor Bingham had four associates, J. B. Miner, J. L. Zerbe, Katherine Murdock, and L. L. Thurstone, who chose as subjects for their studies various phases of the uses of psychological technique mentioned above. A glance at the annual report of the Division for the first year shows that a start had been made on nearly all of the main portions of the original program.

A short time after the institution of the Division, a plan was prepared for a Bureau of Salesmanship Research to be sponsored and housed by Carnegie Institute of Technology and to be supported by a group of thirty coöperating industrial and business houses of national scope, each contributing $500 annually for five years toward the research budget. The founding of this bureau was in many ways a pioneer undertaking, and introduced factors about which there was little known. After the Division had experienced difficulty in obtaining men with training adequate for such work, Northwestern University was persuaded to lend Dr. Walter Dill Scott, who was made Director of the Bureau of Salesmanship Research. The work of the seminar during the year 1916–1917 eventuated in a volume of "Aids in Selecting Salesmen," after the salesmanagers of the coöperating concerns had helped to define the line of attack.

Then came the war. Practically the entire staff of the Bureau of Salesmanship Research and several other members of the Division of Applied Psychology found their best opportunity for usefulness in military psychology or in army personnel work. If peace had been a preparation for war, war no less prepared for peace. The lessons of experience in dealing with all kinds of men in the army later proved valuable in the renewed task of applying scientific methods to problems of personnel in business and industry.

Doctor Scott returned from Washington in the spring of 1919, and a short time later relinquished to C. S. Yoakum the

direction of the Bureau, which then took the new name, Bureau of Personnel Research, because its problems and activities had far outrun the original definition of scope.

The readiness of business men to join hands with a technical institution in coöperative research undertakings may be shown by the fact that within a period of six years the Division of Applied Psychology received from such sources for current expenses a total of about $237,000.

The Research Bureau for Retail Training, an offspring of the first Bureau, was started in 1917 with a provision of $32,000 annually for a five-year period, contributed by seven Pittsburgh stores. The detailed plans of this Bureau were worked out by Doctor Miner, who directed the enterprise during its first critical year. In 1918 Doctor W. W. Charters came from the University of Illinois to take charge of the Bureau. Here were applied to the study of store personnel problems of employment the methods of science, in order that the public might have an increasingly intelligent and courteous department store service.

The initiation of the department of Educational Research dates from 1918, when Doctor Whipple resigned entirely his connection at University of Illinois and came to Pittsburgh as Professor of Educational Research. His work in this new Department was the solution of problems of higher technical education, such as admissions, curricula, and methods of instruction and of administration. The staff of this department was not large enough to meet the demands of research problems and the work was consequently apportioned to the other bureaus.

When Doctor Whipple went to Michigan in 1919, Doctor E. K. Strong, Jr., took over the work in connection with curricula problems, which placed him in a position to later help Mr. John A. Stevenson of the University of Illinois, and Mr. Griffin M. Lovelace of the Connecticut Mutual of Hartford in the preparation of a three months' curriculum in Life Insurance Salesmanship.

This article describes a concrete attempt to make use of psychology by bringing it into the service of students, instructors, administration, and business men by applying its principles to vocational education, to educational administration, and to commerce and industry.

The Educational Significance of Mental Tests. B. H. Bode. Journal of Educational Research, February, 1923, Vol. VII, No. 2, pp. 91-98.

Discusses the significance of mental tests. Although mental tests may predict with reasonable accuracy how well a pupil can do the work of various grades, the significance of this limitation is a different matter. It does not indicate that certain pupils should be assigned to vocational training and others be trained for leadership. The only conclusion warranted is that some pupils are not capable of profiting beyond a certain point by our present curricula and methods of teaching. This may mean that our curricula and present methods of teaching do not represent the only road to the ideal of liberal education. The recognition of individual differences is of tremendous significance but this significance lies in the fact that the special ability may be trained so that it will become a basis for the development of shared interests and shared aims, in accordance with the ideal of democracy. There is a difference in saying that the bulk of our population is not well adapted for meeting the requirements of our high schools and colleges and saying that they are not to be nurtured in the mental outlook, the traditions, or ideals which constitute our common heritage. When we are told that the average man is below the average the argument fails to carry conviction. The recognition that intelligence is not a single thing permits a new perspective on the educational significance of "mental age" and the I. Q. Mental tests are valuable for certain kinds of classifications and predictions but they should not blind one to the fact that life is a garment of many hues. Education must take account of a much greater range of interests and abili-

ties than in the past and build upon these interests and abilities a superstructure of common faith and common knowledge.

Mental Tests as an Aid in the Analysis of Mental Constitution. HARRY J. BAKER. The Journal of Applied Psychology, December, 1922, Vol. 6, No. 4, pp. 350-377.

Investigates the problem of to what extent a useful diagnosis of mental constitution can be effected by means of mental tests, as carried on under such conditions as might be found in psychological clinics.

The fifty students selected for this study, were twenty-five pupils from the Ann Arbor High School and twenty-five from the University of Michigan. The students were tested individually with four different series of tests. The first series included the Thurstone Intelligence Test (Test IV), the Rote Memory for Digits, the Stanford-Binet Examination and the Cancellation test. The second series contained the Army Alpha test, Visual Apprehension of Objects and several tests of lesser importance. The last two series were much on the same order.

Not only were the results of the tests correlated but also case studies were made of the various students, although not as definite conclusions could be drawn from these.

The conclusions concerning the mental tests are as follows:

1. Tests specially designed to measure "general intelligence" are, of course, of paramount value in the measurement of all 'round mental ability.

2. Tests of specific abilities, however, are essential for anything like an analysis of mental constitution.

3. The Thurstone Intelligence Test IV includes items of varying degrees of difficulty, and a penalty might well be imposed on omissions.

4. The Stanford-Binet test is not sufficiently difficult to measure superior adult intelligence.

5. The chief criticism to be leveled at the Completion tests used in this investigation is that certain places in them are exceedingly difficult. In general, these tests correlate well with general ability.

6. Opposites tests were too easy for the college subjects, and not only should there have been more difficult terms, but also the number of items might well have been increased.

7. The score in the Range of Interest test must be interpreted in its relation to maturity in the case of young pupils, but in the case of college subjects it is a direct index to general intelligence with little discount for maturity, save when it needs some discounting on account of unusually wide experience gained in travel or varied occupations.

8. The Linguistic Invention test was of exceptional value in that it presented to all subjects a comparatively novel and interesting task. Ability to compose a short study is a fairly complex ability which taxes productive as well as mere reproductive capacity.

Of the other conclusions the following are perhaps the most important:

1. It is evident from a study of the mental test profiles, and also from the correlation tables, that the mentality of a given individual is on the whole, a uniform affair. That is, high, comparatively average, or low efficiency in any test performance tends to be accompanied by a corresponding grade of efficiency in other performances.

2. Adaptability is one of the chief assets of superior intelligence.

3. Superior intelligence is not an absolute guarantee of excellent scholarship. Lack of interest in subject matter, in some instances lack of industry, or in other instances preference for other activities may contribute to mediocre scholarship.

4. Inferior intelligence is almost universally accompanied by inferior scholarship.

5. Average intelligence, we would expect to find accompanied by average scholarship. As a matter of fact, we find it associated with all degrees of scholarship. In these cases, interest and industry become particularly important factors in determining scholarship.

An Analysis of Moral Qualities and Activities. A. DUNCAN YOCUM. School and Society, February 19, 1923, Vol. 17, 425, pp. 189–196.

Outlines a method for analyzing moral qualities and activities. Prepared for the Committee on Character Education, National Council on Education.

The following steps are necessary to a logical analysis which aims at inclusiveness:

1. The assembling and organization of as nearly as possible the sum-total of moralities, through accepted purpose, social demand and need and scientific determination.

2. The separating out of the most general moralities or those having the greatest recurrence and range of application, as *key-moralities*, regardless of where they may apply.

3. The grouping under each of these key-moralities of all heads and sub-heads which can be assembled under them—regardless of whether any such heads or sub-heads *also* appear under *other* key-moralities.

4. The discovery and indication of all *interdependencies* of the key-moralities and what is grouped under each—so far as is possible before they have been *educationally* analyzed into *control elements*.

5. The selection as its *ultimate outcome*, of the particular control or control element or controls or control elements through which the key-morality or sub-head *fundamentally* affect conduct. For example, *love* is fundamentally an *attitude; strength of character* is a *standard;* and *obedience* or *happiness independent of the possession of material things* an *attitude* and *habit*.

6. The assembling under each fundamental control or control element thus selected *as an ultimate outcome*, of as nearly as possible all the control elements which contribute to it.

7. Selection through scientific determination, of the control elements contributory to the *ultimate outcome* of the key-morality and its sub-heads, which on *a priori* grounds appear to be possible of development and essential to character education—in each period of development, for each type of individual, for each social group, and in each important environment.

8. A consensus (following Dr. Charters' admirable procedure) to determine the social demand and need from the standpoint of both immediate and future recurrence and range of usefulness, for all the moralities *thus translated into control elements;* and to judge so far as is possible from experience along in the absence of new experimentation, whether those demanded or needed can be effectively developed.

9. Study of the control elements thus selected under the *ultimate outcome* of each key-morality, in order to see whether there are apparently enough scientifically determined elements selected in each field of application where consensus was reached, to give some likelihood of the *ultimate outcome* in *control* being attained for the key-morality; and the addition of other control elements which scientific determination found essential, to be experimented with as a check upon their rejection by the consensus.

10. Comparison of the key-moralities as expressed in their fundamental control forms, and of the control elements under them, with the view to discovering those which occur under more than one key-morality, and therefore, the development of which will contribute to more than one *ultimate outcome* and be contributed to by more than one.

11. Selection as an additional essential of key-moralities of any contributory element which at this state of analysis stands revealed as having range and recurrence enough to make it an essential education objective in itself.

The result of all this is that in place of logical items regarded as "Primary" and "Secondary" moralities, there have been substituted conduct controls and control elements; and that in place of generalizations which are and may remain pious hopes and aspirations, there have been substituted definite conduct outcomes each of which requires different and readily determinable materials and methods in order to develop it.

Examples of logical analyses and control elements are given.

It is hoped that a number of key-moralities can themselves be made strong enough to surely control conduct.

Some Results from Three Group Intelligence Tests. JOHN A. MCGEOCH. School and Society, February 19, 1923, Vol. 17, 425, pp. 196.

Gives the results of an experiment with three intelligence tests given to 225 students at Washington University, St. Louis.

Army Alpha, Form 5—the Otis Group Intelligence Scale (Advanced Examination) Form A—and the new Otis Self-Administering Tests of Mental Ability (Higher Examination) Form A, were the tests given. Twenty minute time limit on the new Otis test.

The group was composed of students in the class in general psychology, 14 seniors, 40 juniors, 171 sophomores.

The coefficients of correlation (Pearson's product-moment formula) are as follows:

Alpha and Otis Group scale, r. $+0.77 \pm 0.02$ (185 cases).

Otis Self-Administering and Group Scale, r. $+0.79 \pm 0.018$ (180 cases).

The figures for the performance of the men and the women on the three tests show a slight advantage in favor of the men on the Alpha and Otis Self-Administering, the difference in the Otis Group Scale being insignificant.

A bibliography is appended giving four titles.

Measures of General Intelligence as Indices of Success in Trade Learning. KARL M. COWDERY, Whittier State School. The Journal of Applied Psychology, December, 1922, Vol. 6, No. 4, pp. 311–329.

Considers the problem of the minimum necessary level of intelligence for successful learning of the activities and coördinations involved in the various trades in connection with the task of selecting trade training for boys. For such a study the records of individual intelligence tests and instructors trade reports for each boy were available. Correlations of success with I. Q. were recomputed for comparison.

From the consideration of the relation of trade learning records and the mental levels of those taking training in various occupations, the trades may be classified into three divisions on the basis of the nature of the relationship found to exist. The coefficients of correlation illustrate the three classifications as follows:

1. The positive type, in which there is found a positive coefficient, interpreted as meaning that the expected degree and occurrence of success is directly dependent on the position of the mental level of the boy on the scale of intelligence ratings. The positive coefficients are not large but sufficiently so to be definite indications that general intelligence is a factor in determining extent of success in learning fundamental trade processes.

2. The neutral type in which the coefficient indicates a negligible relationship between mental level and potential ability to make good under the conditions described.

3. The negative type, in which the relationship between mental level and potential ability to make good under the conditions described. The negative type, in which the relationship is the reverse of the positive and indicates that the work is more adapted to those of lower levels of intelligence. Here the size of the coefficient indicates the strong influence of other factors.

The general conclusions are that:

a. General intelligence is a factor which influences trade success during the learning stages in different degrees, depending on the trade and the conditions of instructions.

b. In no group is the degree or fact of success wholly dependent upon intelligence.

c. Lack of a certain degree of intelligence may prevent attainment of a given degree of success.

d. In a few trades and occupational groups statistical treatment of data indicates that general intelligence is practically negligible.

e. The use of general intelligence measures as an aid to specific trade learn-

ing assignments is justified if sufficient care is taken in the interpretation of these ratings and if the relative value of other factors is also considered.

f. There is need for careful study and analysis of the other factors which assist general intelligence in the determination of potential trade ability.

The Determination of Ability for Learning Typewriting. W. W. TUTTLE, Principal of University High School, University of South Dakota. Journal of Educational Psychology, March, 1923, Vol. 14, No. 3, pp. 177-192.

Investigates the possibility of determining in advance ability for learning typewriting. The problem presents itself in this form: Do those who become adepts in typewriting possess certain traits of native ability and can this native ability be measured? In this study the following are considered to be the essential native traits of an efficient typist. 1. Quick motor action. 2. A keen sense of rhythm. 3. Ability to pay attention and be accurate. 4. A well developed memory span. 5. Ability to follow directions. 6. Ability to carry on the process of substitution. These tests were given to a class of 20 students beginning the study of typewriting. After the results of this series of tests were checked, a typewriting test was administered. In order to determine whether the marks made by the students in the above mentioned tests were indicative of the results of the typewriting test, the two sets of marks were correlated. The coefficients of correlation indicate, that motor control, ability to pay attention and be accurate, and ability to do substitution are indicative of capacity to become efficient in typewriting. The coefficient of correlation between the scores for the typewirting test and the scores of these three tests just mentioned was found to be 0.621.

The conclusions obtained from this data are as follows:

1. The data indicate that certain native abilities are closely related to capacity for learning typewriting. The students who receive high grades in these three tests mentioned above also receive high grades in the typewriting test.

2. The results of the above mentioned tests when compared with the results of the typewriting tests indicate a strong relation between capacity to learn typewriting and the tendencies tested.

3. The results of the typewriting tests and the other series of tests when compared indicate that those making a mark of 80 or above in the above mentioned tests will become excellent typists; those making from 75 to 79 inclusive, will be average typists while those making below 75 to 79 inclusive, will be either poor typists or fail entirely.

The Improvement of Speed and Accuracy in Typewriting. Studies in Education, No. 7, pp. 42.

Problem of improving speed and accuracy in typewriting was divided into five parts: first, to investigate the frequency of the occurrence of the letters and marks in the English language; second, to investigate the number and distribution of errors made in actual typewriting, and to learn, if possible, their causes; third, to determine the relative abilities of the eight fingers and the two hands; fourth, to find the loads or burdens of work which the present typewriter keyboard places upon the fingers and hands; fifth, to attempt to enumerate the considerations which must be taken into account in the arrangement of a keyboard according to scientific principles, and to suggest an improved keyboard.

A scale of the frequency of the occurrence of letters and marks in the English language was determined by use of the Ayres spelling scale of the 1000 commonest words in English writing, the 16th chapter of St. Mark, representative business letters, and current newspaper editorials. This work is all summarized in tables.

The relationship between accuracy and frequency of use of letters is found to be very high. r = 924, P.E. = 0.021. Further study brings the author to the conclusion that there is no connection between

accuracy and the combination of letters with which any one letter may happen to be written. Also the position of the keys on the present keyboard exercises very little, if any, measurable effect upon accuracy.

Tapping tests were given to three separate groups of people to determine the relative abilities of the eight fingers and the two hands.

The finger and hand loads of the present typewriter keyboard are arrived at by using the frequency of occurrence of each letter and mark. It is found that the left hand carries a heavier load than the right which has an ability of approximately one-ninth more. Also, one or two fingers are carrying a very disproportionate load.

In the arrangement of an ideal keyboard, the loads on each finger are made as nearly as possible proportionate to their strength. The frequency of use of the letter and marks is made the basis for calculating the loads. From pedagogical considerations, the most used letters are assigned to those keys most favorable from the standpoint of accuracy; and vowels are assigned to the first fingers.

A figure is given showing the suggested rearrangement of the typewriter keyboard. The advantages of this arrangement are: (1) The back space, shift key and shift-lock are brought into a convenient position for operation by the thumb or first finger of either hand. (2) The entire keyboard can be operated without removing the hands from the position they take when the fingers are placed upon the "home keys." (3) The interposition of the shift, shift-lock and back-spacer keys divides the keyboard into right and left halves, thereby tending to avoid errors and undesirable hand movement resulting from the encroachment of one hand on the territory of the other. (4) The interposed keys accentuate the importance and make necessary the confining of each hand to its appropriate bank of keys, with a minimum of movement. These four advantages may be summed up by saying that this keyboard is definitely planned for the most accurate and economical operation by the touch method.

A bibliography of twenty-six titles is appended.

The Measurement of Achievement in Shorthand. Elmer Rhodes Hoke. Studies in Education, No. 6, pp. 118+2 folders.

Measurement of achievement in shorthand has developed out of the movement for measuring by use of scientifically constructed scales the results of educational processes. A short summary of the reasons for using standardized tests is given and presents the problem of the measuring of (1) ability to read shorthand, (2) speed of writing shorthand, (3) the quality of the writing, (4) the knowledge of the system.

Four tests and scales have been developed to measure these abilities in the Gregg System. The test for reading ability, A-1, is a combination of the Ebbinghaus completion method and the method of under-scoring the right word to be substituted. The comprehension of the shorthand text is indicated in the reaction the subject makes in under-scoring the alternative longhand words that occur in the blank spaces. Tests B-1 and B-2 are designed to measure speed of writing. Knowledge of the system, reading ability and speed of eye movements are reduced to a minimum by providing each line in the copy in longhand with the shorthand immediately under it and beneath both of these a space for the pupil to copy in shorthand. The validity and reliability of these two sets of tests are determined.

A scale for determining the quality of shorthand penmanship has sixteen specimens with which is to be compared the person's writing of the same copy. Each specimen has a scale score.

A series of ten vocabulary tests has been devised to measure the knowledge of the Gregg System. It is composed of the 1000 commonest words (Ayres scale) and the 500 commonest phrases as determined in this experiment. Each test calls for 150 answers in shorthand to be set opposite as many words or phrases. After having scored 2818 of these sets of ten tests, the author computed a scale for use of teachers in making their own tests. By use of this

scale they can tell just what per cent of correct shorthand outlines they should expect from their classes.

There is a bibliography of forty-four references and the appendix gives the tests and scales in full.

The Measurement of Management. COL. WILLIAM E. DUNN. Reprint from Michigan Manufacturer and Financial Record, March 17, 1923.

A score of years ago it was thought that an era of scientific management had been attained when executives began to measure and study the performance of the individual worker. It now appears, however, that there is not much prospect of management becoming in any sense scientific until we have developed satisfactory methods for measuring management itself.

Before we can have scientific management we must have a measure of management and before we have the measure we must decide definitely on what we mean by management, and must agree on units for the measure of management.

Management in collective enterprise consists of those executive acts tending to harmonize and coördinate the action of individual members and to direct the united action of the whole to effective and successful accomplishment in dealing with present situations and in preparing for future ones. This definition involves four related factors: the man, the situation, his actions, and the results.

Ability in management may be measured in terms of : (1) total production, output, or results; (2) total men; (3) total time; (4) total receipts; (5) total expenses; (6) total assests and total liabilities; (7) the situation. Reduced to mathematical form the index of ability of management equals

$$\left(\frac{\text{Total output}}{\text{Men}\times\text{Time}}\right)\times\left(\frac{\text{Unit profits}}{\text{Unit costs}}\right)\times\left(\frac{\text{Difficulties}}{\text{Capital}}\right).$$

A means of relating ability of management ment to the conditions of the situation may be arrived at by rearranging four of the terms in the above formula—Percentage of profit $= \frac{\text{Total output}\times\text{Unit profits}}{\text{Time}\times\text{Capital}}$

The formula is presented rather as a means of investigating the relationships between the various factors identifiable, than as a hard and fast statement of a final solution to the problem of measuring management, for the relationships between the factors are quite complex. The point which has been overlooked in previous attempts at measuring management is that there can be no measure of management without reference to the situation under which that management acts. There are, then, two unknowns in the formula and one must be evaluated before the formula can give the other. It is evident that the formula is an indirect means of measurement for either the difficulty of the situation or for the ability in management. By keeping the management factor constant, it is possible to compare the results obtained over various periods of time. In making a systematic study of the difficulties of the situation over different periods of time, it is desirable to specify those difficulties so that they may be recognized when next encountered. When the main features of a situation can be identified with some accuracy, statistical method may be resorted to, and data may be then accumulated on how organizations known to be successful handle a given situation.

The line of investigation proposed here cannot help but improve the quality of management, but before the investigation can be properly carried on industrial organizations and business enterprises must first be willing to make data available for research use in a central bureau.

Analyzing Human "Frictions." DALE S. COLE. Industrial Management, March, 1923, Vol. 65, No. 3, pp. 146–148.

To a great extent, it is believed that the application of physical or scientific laws to problems of human engineering can be compared to those of mechanics, with interesting analogies. All human beings, employees in an organization, are in more or less intimate contact with each other. The "common tangent plane" is the meeting ground, the point of contact. The point of contact may be of several kinds, as measured in degree of relationship based on authority, which is the bond of

organization. Granting that authority is the connecting link between the component parts, then it must be administered in such a way as to eliminate or at least reduce friction. The giving and receiving of orders, without friction depends on the way it is done and on the character of the surfaces in contact as well as the intensity of this contact.

Business life is accelerated motion. Any individual in an organization who is standing still is in the way, impeding the progress of himself, others and the organization. While the importance and variety of human nature is not to be discounted, a sensible comparison of some of the fundamental laws of science will at least serve as guide posts in many an intricate human engineering problem.

Methods of Evaluating Our Immigrant Peoples. KATE HOLLADAY CLAGHORN. Mental Hygiene, January, 1923, Vol. VII, No. 1.

Analyzes the commonly employed technique in evaluating immigrant peoples. The statistical methods used are junked chiefly because of the common, incorrect interpretation of the results. Faults in the customary reports on criminality rates are stated and are due to the failure to clear away conflicting factors. The measurements of so-called intelligence are said to be not adequate but the factors of instinctive and emotional forces are urged as necessary facts in proper evaluation.

The type of research needed for the proper knowledge on which to set values is a study of interaction, that is a study of stimulus as well as response. The technique for these studies has been developed by social workers and includes intensive studies of personal histories, work histories, of the environments into which the immigrant comes, and experimentation. The research social workers are not adequately trained in this technique of the social science, thus training is a requisite to adequate collection of these data. Cooperation of the many workers who add to this growing quantity of information about the immigrants would aid in this evaluating process.

Affective Factors in Vocational Maladjustment. LORINE PRUETTE AND DOUGLAS FRYER. Mental Hygiene, January, 1923, Vol. VII, No. 1, pp. 102–118.

Enumerates affective factors occurring as causes of vocational maladjustment. Emotional abnormalities cause greater disturbances than do intellectual handicaps. Nineteen cases illustrating various types of affective disturbances, their results and possible solutions are given. The affective disturbances and causes commonly found are manic state or depression, "inferiority complex," childlike faith in advice, narcissistic tendencies, organic defects, peculiar habit acquisitions, excessive individualism, refusal or inability to face the reality, general demoralization, disappointments in love, and moral complexes. Pressure resulting in conflict produces most affective problems. There seems to be no correlation between affective disturbances and the ability to do mental work. However, recent clinical studies show that emotional blocking may lower the intelligent quotient of a patient ten to twenty points but the emotional disturbances usually obscure any direct influence upon the intellect in vocational adjustment. Restraining the individual, changing the environment, supplying outside interests may assist these affective cases.

The Relation of Vocational and Educational Guidance to Vocational Education. ARTHUR F. PAYNE, University of Minnesota. The National Vocational Guidance Association Bulletin, February, 1923, Vol. 1, No. 7, pp. 103–107.

Shows the gap between the two fundamentally related fields of vocational guidance and vocational education and furnishes tentative answers to the questions whether or not: (*a*) vocational guidance is an integral part of vocational education; (*b*) vocational education is a part of vocational guidance; (*c*) vocational guidance and vocational education parallel each other; (*d*) vocational guidance precedes or follows vocational education; (*e*) they ought to be administered by the same or different units of administration.

The author suggests that vocational and educational advisement should be done only on a basis of scientific data secured by analyses of individuals and occupations. A technique should be developed for making these analyses, for testing and evaluating occupational and individual characteristics, for routing individuals through the system and for placement and supervision in employment. An outline for this analysis, etc., is presented.

No public school student should enter on any prevocational or vocational course except through the system of vocational and educational advisement. An adequate system of records covering all phases of the student's career from pre-school age to 21 should be maintained to give (*a*) a basis for advisement, (*b*) a basis for adjustments, (*c*) data for charges in the advisement, training and placement systems. The entire guidance system should be an integral part of the regular public-school system.

Analysis of Occupations for Purposes of Educational Direction and Vocational Guidance. A. H. EDGERTON, Detroit Public Schools. The National Vocational Guidance Association Bulletin, February, 1923, Vol. 1, No. 7, pp. 108-112.

Describes the publications on "Opportunities and Requirements in Local Occupations." Shows the types of information secured for each occupation and gives as an example an analysis of the job of Cashier Inspector in Department Stores. The information secured in these analyses is communicated to students in the schools in a number of ways, e.g., through individual conferences with the students, through group meetings to have talks by specialists, by incorporation of the material in the regular courses of instruction, etc.

Methods of Presenting Vocations to High School Pupils. E. E. SPANEBEL, Pittsburgh. The National Vocational Guidance Association Bulletin, February, 1923, Vol. I, No. 7, pp. 112-117.

Mentions a large number of methods of giving vocational information and counsel, which is regarded as an important work not only from the point of view of helping the individual but also from the broader view of attaining a better distribution of human service. The personal interview is the method par excellence. The following of the regular curriculum will reveal aptitudes, interests and disabilities. Classes in occupations can give a general understanding of the possibilities for life-work: groups interested in particular occupations can be reached through occupational group conferences and through student clubs. Information can be given through libraries, school publications and assemblies, slogans and posters, and by wireless broadcasting. "Vocational Guidance Weeks" can be held. Coöperation with civic and professional bodies, visits to industries and part-time employment are other means of interesting students in particular vocations.

Promoting Sales Through Studying Men and Markets. JOHN MARSHALL HOLCOMBE, JR. The Association of Life Agency Officers, November 10-11, 1922, pp. 37-46.

Sales Research Bureau during its first year of operation 1921-1922. Two Charts are included, the first showing the fields of Bureau activities in 1922, the second showing how the Bureau operates. The fields of activity are five in number, namely, (1) pooled monthly statistics of life insurance sales, (2) surveys of current practices in agency departments, (3) surveys of clerical jobs and systems in home offices, (4) research on selection of agents, (5) research on analyses of agency work.

The second chart shows how the Bureau operates its methods of securing material, its methods of using results. The five means of securing materials are through (1) interviews and conferences at company home offices; (2) interviews and conferences at Bureau firms (4) questionnaires and correspondence (5) surveys—analyses of agency work. The methods of using results are by (1) general reports (2) individual special reports (3) conferences at company and Bureau offices (4) addresses and consultations at company conventions (5) bulletins and new items, (6) correspondence.

Mr. Oliver Thurman, chairman of the executive committee, spoke of the origin of the Bureau, its location in Pittsburgh

at the Carnegie Institute of Technology, and its anticipated move to New York. Representatives of several member companies told of specific occasions when the Bureau had been of especial service to them.

Experiments in Junior Employment in the United States. VIRGINIA C. BACON, United States Employment Service. The National Vocational Guidance Association Bulletin, February, 1923, Vol. I, No. 7, p. 108.

Covers a survey of vocational guidance and placement in 14 representative cities in the United States which was made by the Junior Division of the United States Employment Service in coöperation with the Children's Bureau. Bureaus are conducted under four auspices: private boards public schools, state industrial commissions and the Junior Division of the United States Employment Service. There are wide diversities in methods and emphasis, but certain principles seem to be established. These include the personal interview privately conducted; follow-up as a part of regular technique; service of the bureau as a centre for service and consultation as well as placement; the realization that the direction of children into educational channels is a service at all times as important as placement; the response to such personal and social needs of the child as may be discovered; the establishment and maintenance of a system of records and reports; and recognition of the fact that information—concerning the applicant, educational opportunities and the occupational world—constitutes the working equipment of the placement office.

Vocational Rehabilitation—Its Purpose, Scope and Methods with Illustrative Cases. Federal Board for Vocational Education, January, 1923, Bulletin No. 80.

Discusses the possibilities and need for Vocational Rehabilitation in view of the fact that in the year 1919–1920 it was estimated that 180,000 persons suffered permanently disabling accidents in industrial and public life and that this figure excluded those who had permanent disabilities due to disease or congenital conditions.

The Vocational Rehabilitation Act of 1920, administered by the Federal Board for Vocational Education, allots money to the states, with the provision that each dollar of federal money must be matched by a dollar of state money. The states do the actual work or rehabilitation through their state boards for vocational education. Methods of rehabilitation and work already accomplished by the states are described and illustrated.

The appendix contains a digest of the Federal Act, a suggested form of State Acceptance Act, and a list showing the annual allotment of Funds to the cooperating states for the years ending June 30, 1923 and 1924.

Entretiens sur l'Orientation Professionnelle. JULIEN FONTEGNE, Directeur du Service Regional d'Orientation professionnelle pour l'Alsace et la Lorraine. Strasburg, September 15, 1921. 31 pp.

Gathers together a number of talks given to the teaching personnel of the city of Strasburg. The brochure is dedicated to teachers and the author suggests its use in reading, spelling and arithmetic lessons as a means of giving vocational information to classes.

The importance, both for individual and country, of wisely choosing a vocation is pointed out and children and parents are urged to choose those occupations which require apprenticeship. Statistics show steep curve of the apprentice-skilled worker's salary as contrasted with the straight line representing the unskilled worker's earnings. M. Fontegne preaches the dignity of manual work, warns against overcrowding the occupations which happen to be "in fashion," especially "white collar" jobs and urges country boys to practice a trade in the country rather than migrate to the towns. When choosing a vocation, all boys are urged to go through a process of self-analysis, asking themselves why they wish to enter the vocation of their choice, what they expect to do in it,

and what are their particular aptitudes and disabilities. Finally they are asked to consult the Vocational Guidance Office.

The first appendix gives a list of professional schools and continuation schools.

There is also an outline occupational specification for the job of a blacksmith which suggests the necessary physical, psychical and intellectual requirements, and is for the use of Vocational Counsellors.

Essais d'Orientation Professionnelle pour Employes de Commerce. JULIEN FONTEGNE. Association Francaise pour Avancement des Sciences—Psychologie Esperimentale. Congres deRouen, 1921, pp. 21.

Explains the methods used in examining the 83 children, (17 per cent of the total number) who presented themselves at the Vocational Guidance Office from February to July 1921 and wished to enter commercial occupations. Parents and children are interviewed according to forms which are given in the appendix. The child's schooling record is examined. The child receives a psychological-vocational examination, consisting of tests of attention, of speed in reckoning, of memory, of classification, etc. A profile chart of each candidate is made and is based on norms established after the examination of about 50 children in each test. There will be a much nearer approach to scientific accuracy when thousands of children have been examined.

L'Activite de l'Office d'Orientation Professionnelle de Strasbourg pendant l'annee 1922. JULIEN FONTEGNE. Strasbourg, January 6, 1923. 15 pp.

Shows the development of the work of the Vocational Guidance Office in Strasburg, not only in the direction of dealing with increased numbers, a total of 918 boys and girls as against 704 in 1921, but also in the direction of better coöperation with teachers, parent and employers. The advice of the office is only given after an examination of the medical and scholastic records of the child, an interview with the parents, sometimes a psychological examination and after a consideration of the state of the labor market and of the openings for apprenticeship.

Statistical tables show the number of boys and girls interviewed and the number of visits each made to the office, the relation between the expressed desires of the children and the advice given by the office and the numbers who found employment through the Placement Office. One section deals with the problem of placing the 197 country boys who went to the office for advice. The office has tried to keep these boys in the country advising them to go into agricultural occupations or into rural trades for which there is considerable demand.

The office has not been so successful in dealing with girls as with boys, because fewer ocupations are open to them and because there is a tendency for parents to keep their daughters at home for a year after finishing primary school so that they do not go directly to the Vocational Guidance Office.

Migration Welfare and Protection Work. International Labour Review, February and March, 1923, Vol. 7, Nos. 2 and 3, pp. 366–376.

Gives the measures which are being taken by various countries to encourage immigration or emigration and to protect their nationals.

The Society for the Oversea Settlement of British Women is subsidized by the Government to assist women to emigrate to the colonies. The British Labour Party is taking the attitude that emigration is a poor remedy for the present state of industrial depression and points to the number of returned emigrants who have failed to find new opportunities and are now back in Great Britain in much worse plight than before they left.

France is arranging schemes for bringing to France orphans of alien nationality, generally the children of persons who had been refugees, and for training them to earn their living, preferably in agriculture.

In Italy, the Federation of Trade Unions (a fascist organization), the Italias General Federation of Labour and Opera Bonomelli (a Catholic Welfare Organization) have

stated that emigration should be encouraged and its control reorganized.

Particulars are given of an agreement between Danish and German Transport Unions, of the work of a Swiss society for Swiss nationals living abroad, of a similar society in Austria, of the work of the Swedish National Anti-Emigration Society and of a joint committee for Jewish Emigration recently formed in Berlin.

In the United States, the question of the immigration law will be raised in Congress by a proposal to cut the present three per cent quota to two per cent. The Iron and Steel industry is expected to ask that the percentage should be increased or that the three per cent should be made net, i.e., that the number of departing emigrants should be taken into consideration.

The Chamber of Commerce of New York is opposed to unregulated immigration and recommends examination of prospective immigrants before departure from the country of their origin.

The American Federation of Labour urges the maintenance and even the strengthening of the present restrictions.

The British Labour Movement and the Industrial Depression. SIDNEY WEBB. International Labour Review, February and March, 1923. Vol. 7, Nos. 2 and 3, pp. 209–229.

Describes the effects of the present economic depression on British Trade Unionism, its membership, funds and organization and its political and other external relations.

Wage reductions during 1921 and 1922 have been forced almost universally, frequently without reference to other economic phenomena such as reduction in volume of production and profits, and were often more severe than the fall in prices warranted. On the other hand, there has been hardly any change in the hours of labor and the custom of granting annual holidays on full pay is an interesting development.

The causes of the decline of Trade Union membership from about 8¼ millions to about 6 millions are analyzed and shown to consist in the transference of workers from war-time to peace-time employments, in the unprecedented extent of unemployment and to a slighter degree in the deliberate or apathetic desertion of workers from Trade Unionism which has failed to avert the catastrophic reductions of their wage rates and to provide for them in unemployment. The depletion of Trade Union funds over the same period is attributed to the enormous amounts paid in unemployment benefit.

In spite of the decline in memberships and funds, there is a noticeable improvement in trade union organization and structure. Many of the smaller unions have amalgamated or been absorbed into larger ones. An extensive and highly qualified Trade Union civil service has been built up to cope with the problems confronting the organizations.

Labor is now represented in Parliament by 142 members and the labor vote has grown to more than four millions. This fact together with the maintenance of trade union organization during a period of unparalleled depression is attributed to the intellectual development of the working class and is seen as the result of the slow but continuous amelioration of elementary, secondary and technical education during the past half-century, of the continuous training afforded in the present century by Workers' Education enterprises, and of the coöperation with the workers of men and women of higher education and wider social experience.

A Study of the Underwear Industry. JEAN DOUGLAS MACALPINE. Mental Hygiene, January, 1923, Vol. VII, No. 1, pp. 70–101.

Analyzes the underwear industry with special reference to opportunities for sub-normal girls. Study was made in forty-six concerns located in or near New York City. Includes investigation of factors influencing the industry, descriptions of the working condition of current practices and detailed job analyses of the nineteen processes involved. Wages, employee-employer relationships, trade organizations and trade training and apprenticeship are discussed with special emphasis on their relation to the vocational possibilities of the trade for sub-normal girls. It is concluded that a sub-normal

girl might be very happy as a ribbon presser or an operator in a section house, but so long as the majority of shops remain small, it is hardly advisable to train a girl for an industry in which there are so few openings.

The Medical Examination of Food Handlers. C. V. CRASTER, M.D. American Journal of Public Health, March, 1923, Vol. XIII, No. 3, pp. 196-201.

Discusses the medical examination of food handlers. Medical examination of food handlers in Newark, N. J., has been proven worth while. Although contagion is not more prevalent among food handlers than among any other body of industrial workers, evidence gathered shows that many were employed while in a diseased condition. Medical examination eliminates the cheap labor of diseased persons from food handling occupations and safeguards the health of the public.

The Effects of Cigar and Cigarette Smoking on Certain Psychological and Physiological Functions. ROBERT LEE BATES. II. Blood Pressure and Heart Rate. Journal of Comparative Psychology, Vol. II, No. 4, pp. 279-302.

The second of a series of reports from the Psychological Laboratory of the Johns Hopkins University on cigar and cigarette smoking and its effect upon certain psychological and physiological functions. The blood pressure, measured by a clinical sphygmomanometer, and heart rate determined by counting beats for 15 seconds are taken on six students at Johns Hopkins University, one of which is a woman.

The procedure is as follows:

1. Arrival at the laboratory, 20 minutes rest in the chair.

2. Commencement of the blood pressure routine measurements: readings every three minutes until 8 readings had been taken (24 minutes).

3. Free association test, in place of the ninth reading (3 minutes).

4. Continuation of the blood pressure routine for three more readings (9 minutes).

5. Smoking commenced, cigar or cigarettes, and continued until one cigar or three cigarettes were consumed.

6. Fourteen more blood pressure readings taken (42 minutes).

7. Second free association test, in place of the twenty-seventh reading (3 minutes).

8. Three more blood pressure readings (9 minutes).

Total duration, 1 hour, 50 minutes: of blood pressure record, 1 hour, 30 minutes.

Sixty-seven tables and eight figures give the statistical results of this experiment.

A cardio-vascular adjustment is found to be occasioned by smoking. It is pointed out that this adjustment must be compared with other changes due to other causes which may be either physiological or psychological.

The effects, on healthy young adult reactors, of smoking a cigar or three cigarettes, are to produce a rise in systolic and diastolic blood pressure, and in heart rate. This rise varies in amount and in rapidity, from reactor to reactor, and from day to day for the same reactor. The rises in blood pressure usually amount to but a few millimeters, about the previous average level, and are in almost all cases less than ten, but may in some cases be over twenty millimeters. The rise in heart rate is irregular; less than ten per second in most cases, but may be as much as twenty. The normal irregular variations in blood pressure, due to various causes, are practically as great as the variations which may be ascribed to tobacco, but the normal variations in heart rate are less significant than the tobacco effects.

The blood pressures and heart rate subside to "normal" in from twenty to thirty minutes. In some cases this subsidence occurs before the finishing of the cigar or cigarettes: in other cases, the decline does not appear, and the rise may even be continued, for some minutes after the cessation of smoking. In other cases, the cessation of smoking is marked by an immediate decline in blood pressures and heart rate. While it seems probable that the time elapsing after the beginning of smoking is a more important factor than the discontinuance, this can not be clearly made out from the records so far obtained.

How far this effect is due to absorbed smoke-products, and how much to the psychological factors involved in the smoking process, remains to be discovered. Provision for extensive psychological work on blood pressure is urgently needed.